CONTRINEX

NEW

INDUCTIVE SENSORS

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

INDUCTIVE SENSOR SECTION

IO-Link

LARGEST SELECTION OF IO-LINK SENSORS IN THE INDUSTRY *

A Swiss Company

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

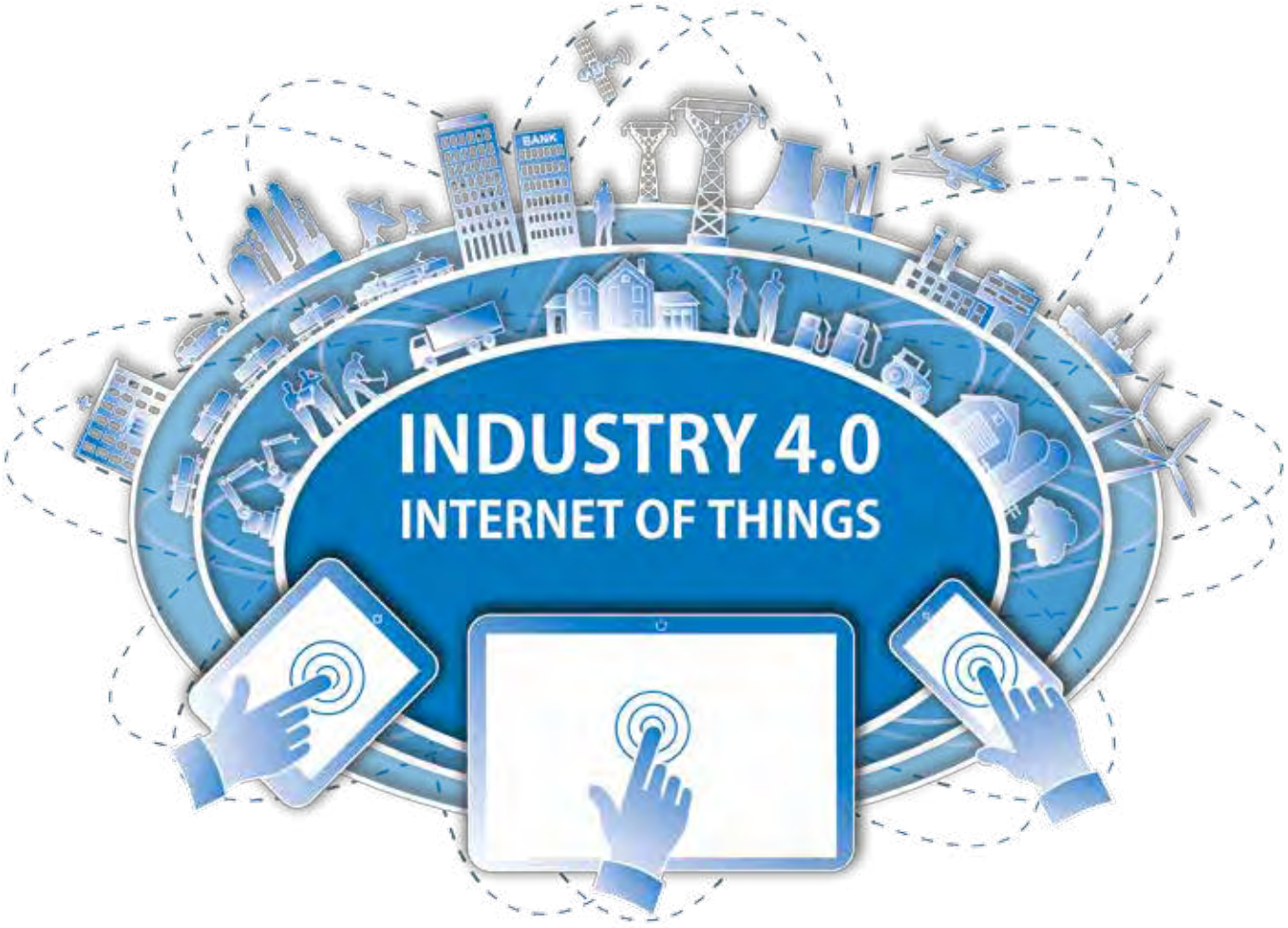
Fit for the future with IO-Link

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

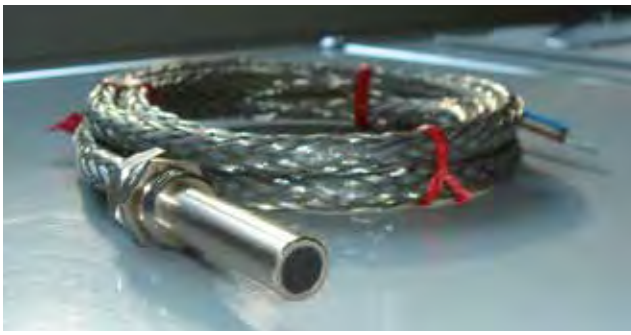
2008 Launch of Safetinex®, the industrial safety product range

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

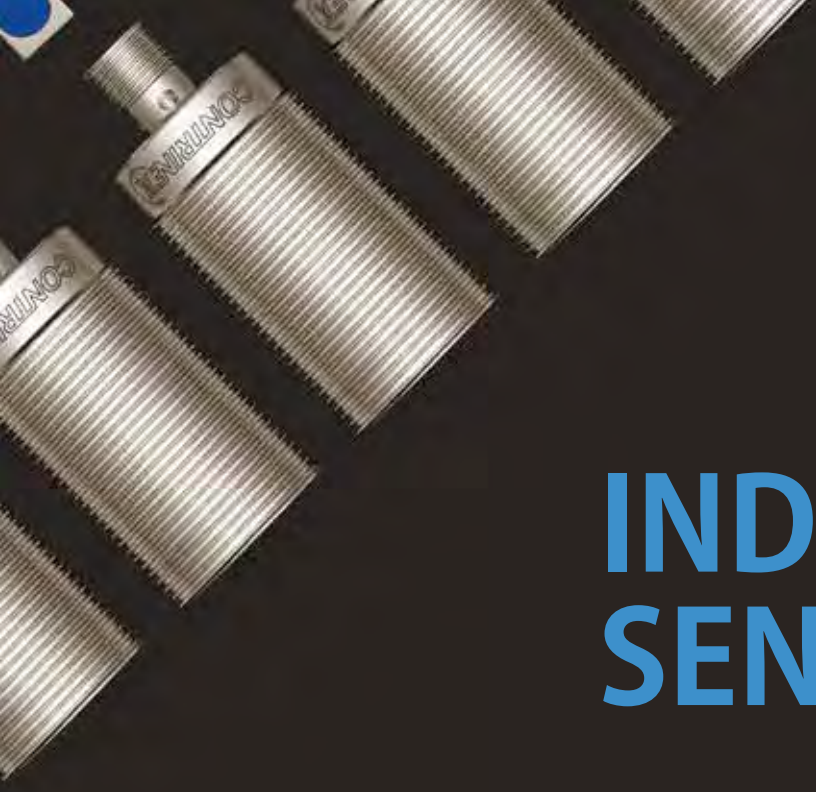


Early inductive sensor produced for own use in 1973 (special version for extreme conditions)

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 IO-Link	MINIATURE IO-Link	EXTREME IO-Link	ANALOG OUTPUT	
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
	p.103	p.131				
	p. 103					
	p. 104	p.131				
	p. 105	p.131	p.143			
	p. 105					
	p. 106, 110					
	p. 107, 110-113		p.143, 147			
	p. 107, 114-119		p.143, 147			p.171
	p. 108, 119-123		p.143, 147-148			
	p. 109, 124-127		148-149			
			p.149			
		p.135				
		p.131				
		p.135				
		p.135-137				
		p.137-138				
				p.153		
		p.137		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 (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)	PAGE
EXTREME		
M8 / M12	2 ... 3 mm	83 - 84
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
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
∅ 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
∅ 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
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
M18	5 ... 10 mm	153, 157
M30	12 mm	157
M30	3 ...5 mm	161
MARITIME		
M12	1.5 mm	165
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

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**.

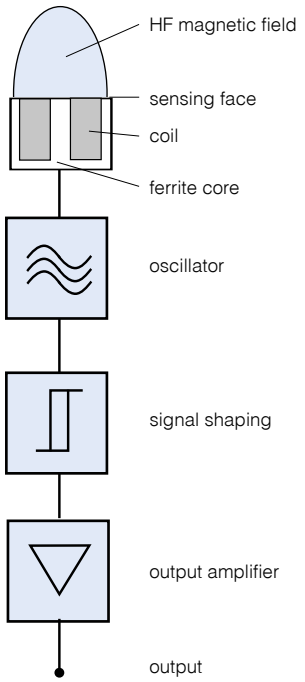


Fig. 1: Conventional inductive sensor technology, as used in the ***Classics*** family

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.

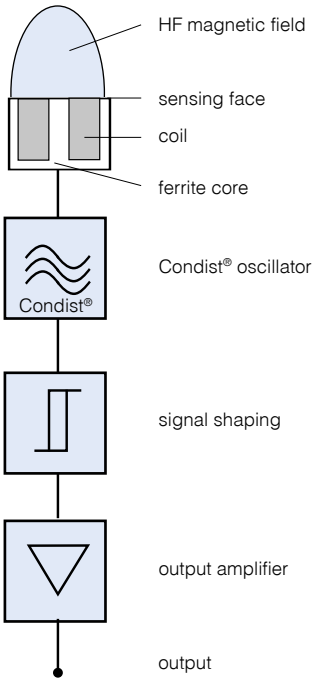


Fig. 2: Contrinex's Condist® inductive sensor technology, as used in the ***Extra Distance*** family

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.

FULL INOX FAMILY:

All-round stainless steel protection - practically indestructible

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

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

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

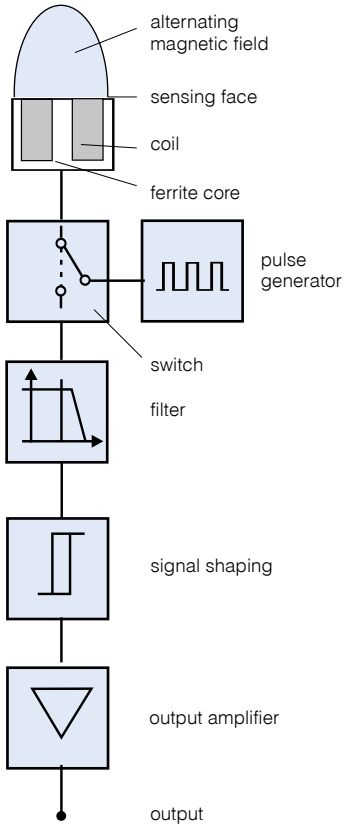


Fig. 4: ***Full Inox*** family sensors use Condet® pulse generator technology instead of an oscillator

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.

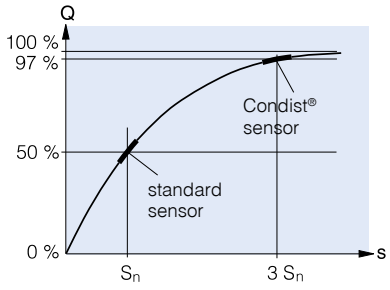


Fig. 3: ***Extra Distance*** family sensors have a longer operating distance, due to Condist® oscillator technology

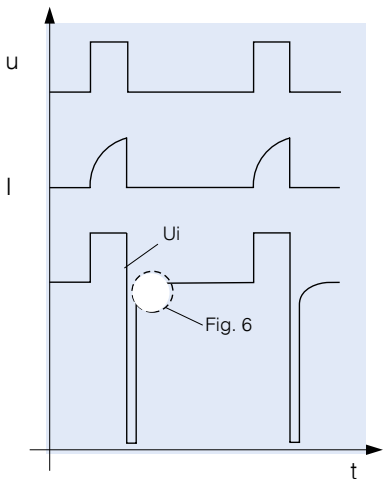


Fig. 5: Evolution of main signals

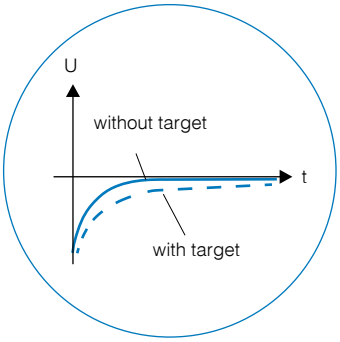


Fig. 6 (detail fig. 5): Effect of a target on the measured signal

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.

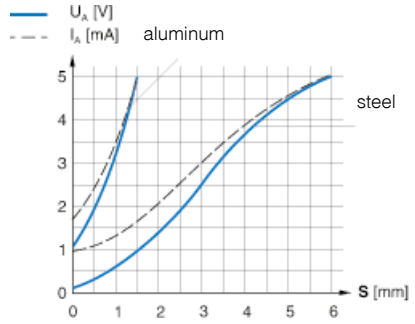


Fig. 7

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.

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.

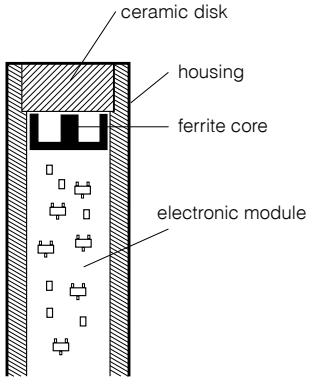


Fig. 8

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.

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

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

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

High temperature sensors use **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.

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.

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.

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:

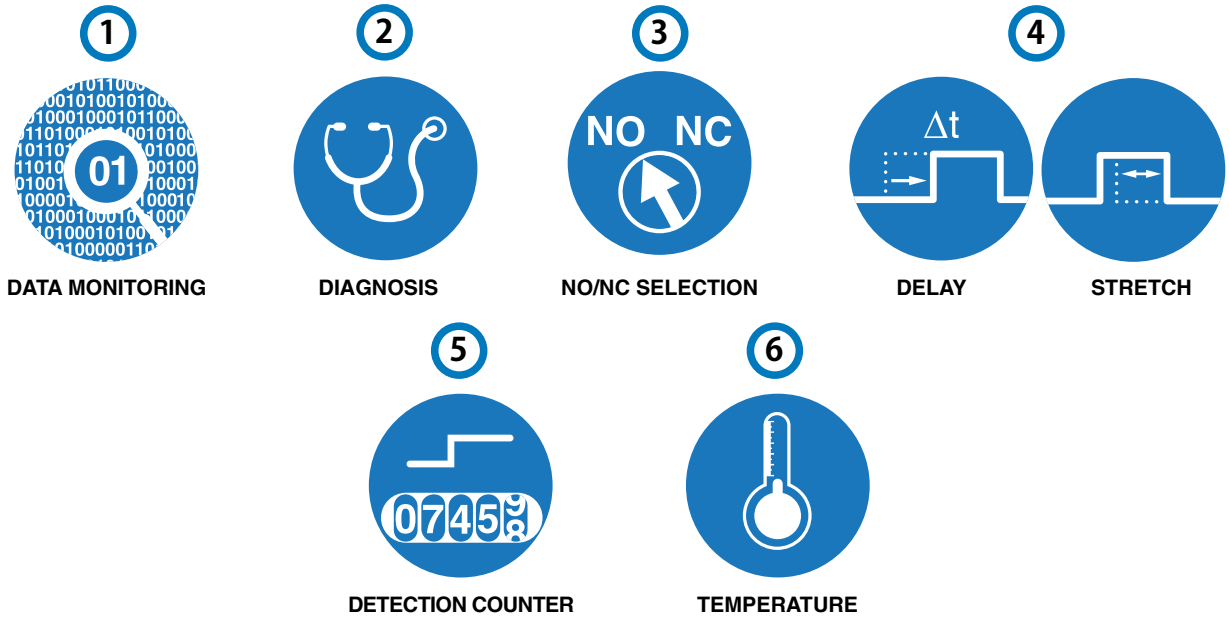
4. The timing of output switching can be configured. Depending on the needs of an application, output switching can be delayed or the duration stretched through programming.

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

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

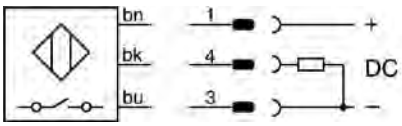
- ✓ Extremely robust one-piece stainless-steel housing
- ✓ Corrosion resistant
- ✓ IP 68 and IP 69K, sea water resistant
- ✓ Pressure resistant up to 80 bar (1160 psi)

RANGE OVERVIEW	Housing size	Classics	Extra Distance	Full Inox
BASIC	∅ 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		

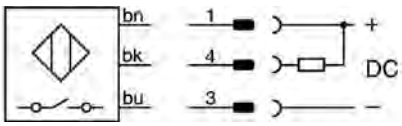
INDUCTIVE

WIRING DIAGRAMS

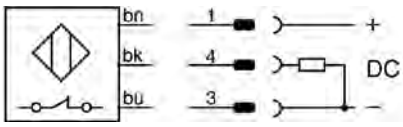
PNP NO



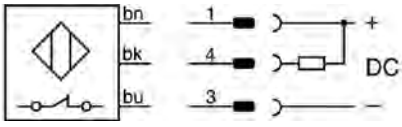
NPN NO



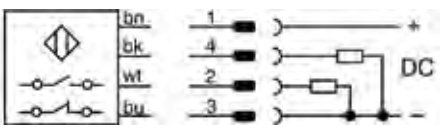
PNP NC



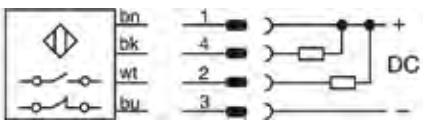
NPN NC



PNP Changeover



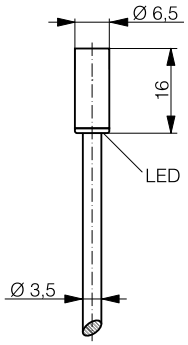
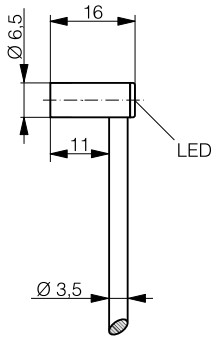
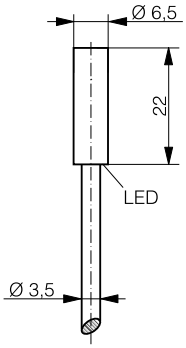
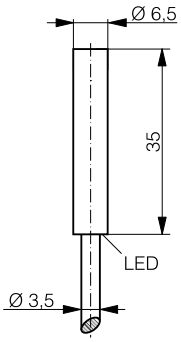
NPN Changeover



DATA

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

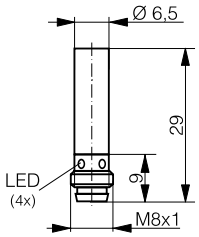
BASIC

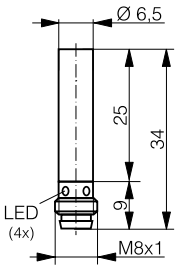
CLASSICS	CLASSICS	CLASSICS	CLASSICS
Ø 6.5	Ø 6.5	Ø 6.5	Ø 6.5
1.5	1.5	1.5	1.5 (4)
			
			
IO-Link	IO-Link	IO-Link	IO-Link
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
PVC cable	PVC cable	PVC cable	PVC cable
IP 67	IP 67	IP 67	IP 67
Embeddable	Embeddable	Embeddable	Embeddable
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)

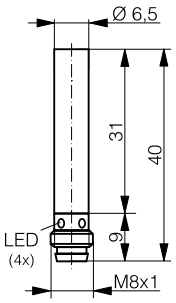
BASIC

INDUCTIVE

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

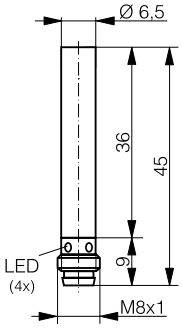
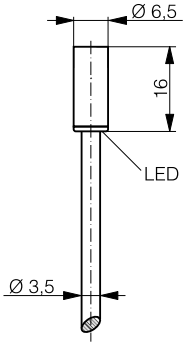
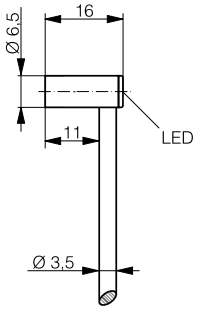
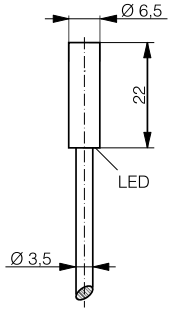






DATA	IO-Link	IO-Link	IO-Link
Housing material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connection	Connector S8	Connector S8	Connector S8
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	5000 Hz	5000 Hz	5000 Hz
Supply voltage 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

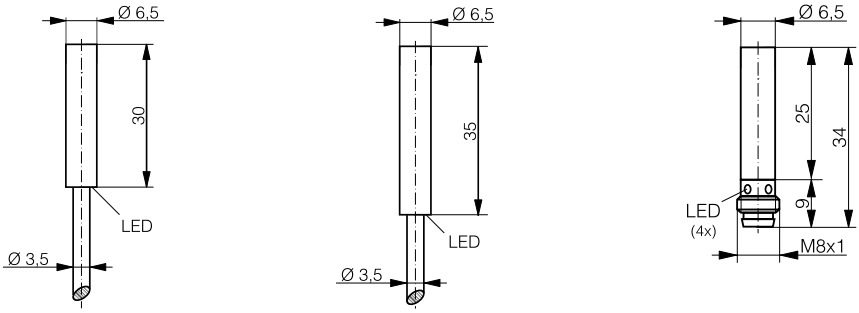
BASIC

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

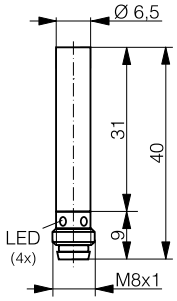


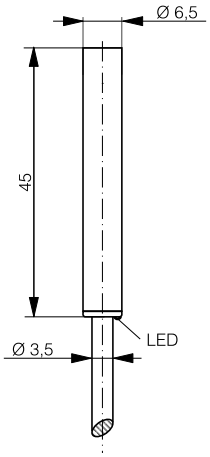
DATA	IO-Link	IO-Link	IO-Link
Housing material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connection	PVC cable	PVC cable	Connector S8
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	5000 Hz	5000 Hz	5000 Hz
Supply voltage range	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

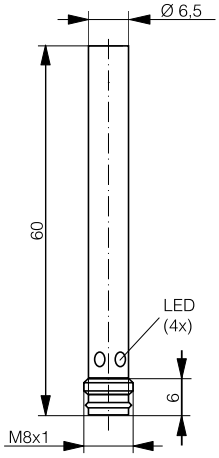
BASIC

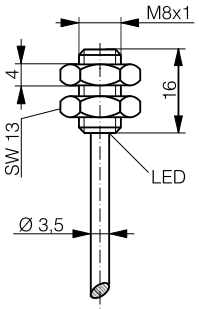
CLASSICS	EXTRA DISTANCE	EXTRA DISTANCE	CLASSICS
Ø 6.5	Ø 6.5	Ø 6.5	M8
2	3	3	1.5









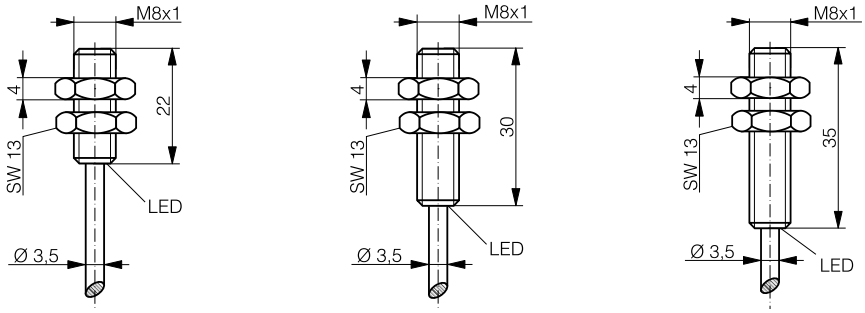
* IO-Link available from Q4/18

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

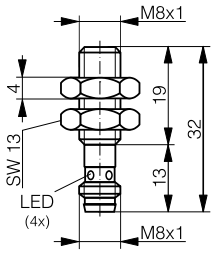
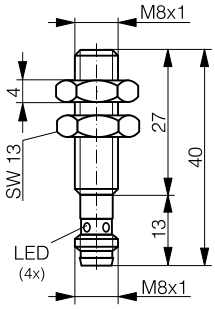
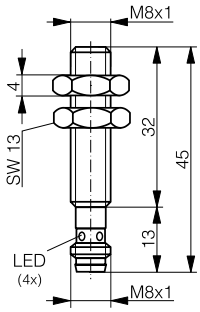
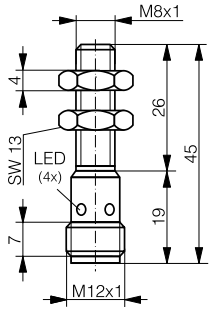
INDUCTIVE

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

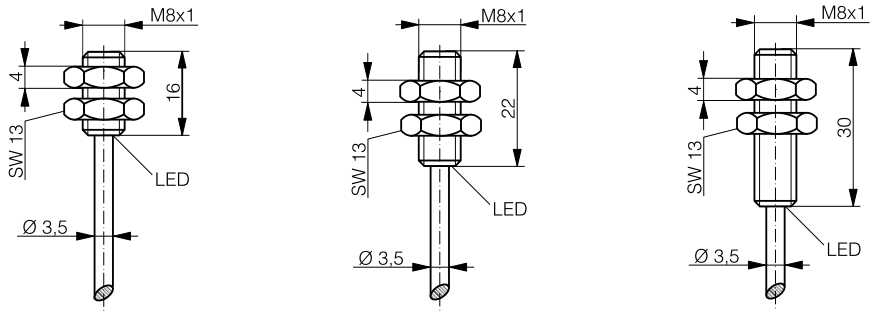
BASIC

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

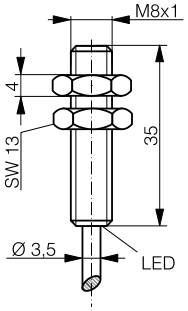
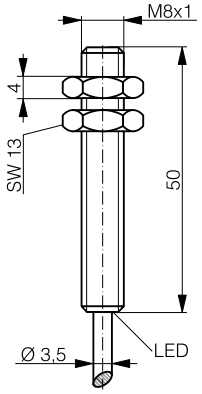
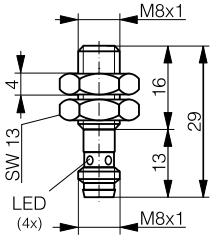
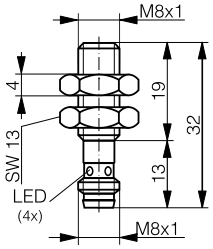
INDUCTIVE

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

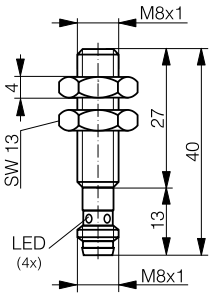
BASIC

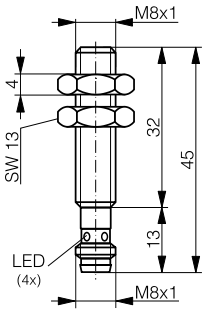
CLASSICS	CLASSICS	CLASSICS	CLASSICS
M8	M8	M8	M8
2	2	2	2
			
			
IO-Link	IO-Link	IO-Link	IO-Link
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
PVC cable	PVC cable	Connector S8	Connector S8
IP 67	IP 67	IP 67	IP 67
Embeddable	Embeddable	Embeddable	Embeddable
5000 Hz	5000 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

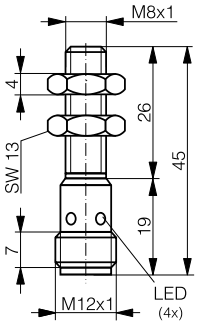
BASIC

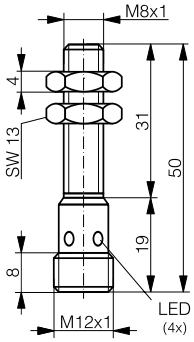
INDUCTIVE

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



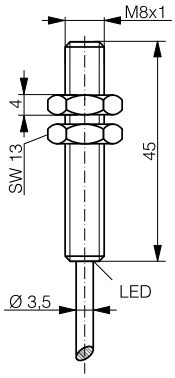
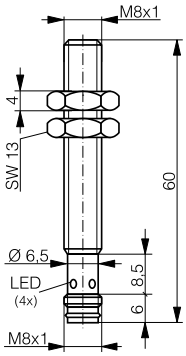
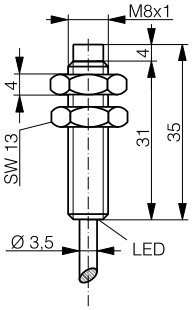
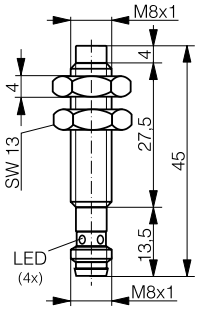
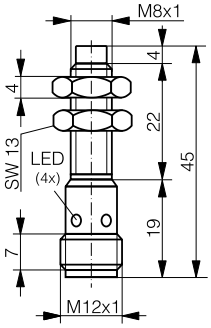






DATA	IO-Link	IO-Link	IO-Link	IO-Link
Housing material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connection	Connector S8	Connector S8	Connector S12	Connector S12
Degree of protection	IP 67	IP 67	IP 67	IP 67
Mounting	Embeddable	Embeddable	Embeddable	Embeddable
Max. 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	

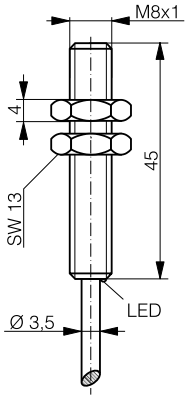
BASIC

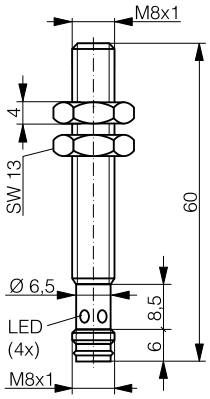
FULL INOX	FULL INOX	CLASSICS	CLASSICS	CLASSICS
M8	M8	M8	M8	M8
2	2	2.5	2.5	2.5
				
				
IO-Link	IO-Link	IO-Link	IO-Link	IO-Link
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
PUR cable	Connector S8	PVC cable	Connector S8	Connector S12
IP 68	IP 68 / 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

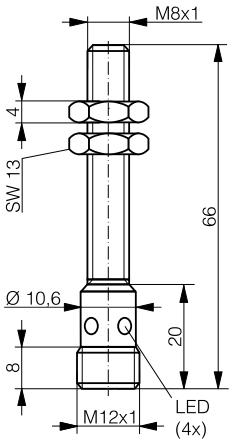
BASIC

INDUCTIVE

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





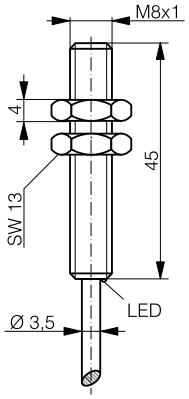


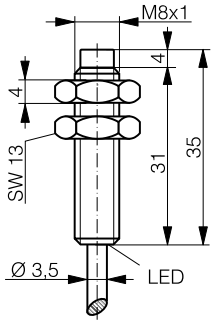
* IO-Link available from Q4/18

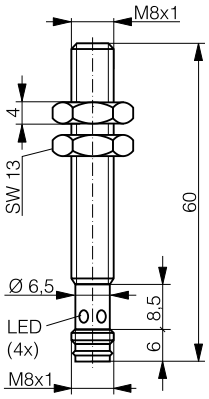
DATA	* IO-Link	* IO-Link	* IO-Link
Housing material	Chrome-plated nickel silver	Chrome-plated nickel silver	Chrome-plated nickel silver
Connection	PVC cable	Connector S8	Connector S12
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	1000 Hz	1000 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

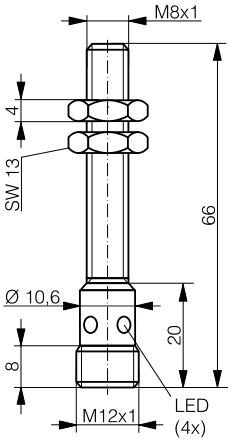
BASIC

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







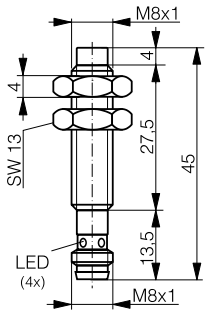


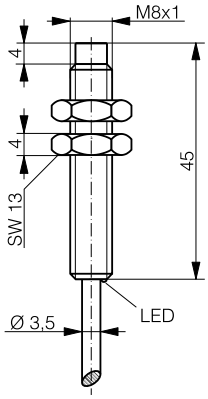
* IO-Link	IO-Link	* IO-Link	* IO-Link
Chrome-plated nickel silver	Stainless steel V2A	Chrome-plated nickel silver	Chrome-plated nickel silver
PVC cable	PVC cable	Connector S8	Connector S12
IP 67	IP 67	IP 67	IP 67
Embeddable	Non-embeddable	Embeddable	Embeddable
500 Hz	3500 Hz	500 Hz	500 Hz
10 … 30 VDC	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

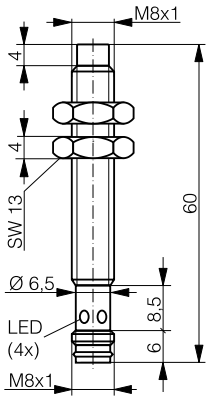
BASIC

INDUCTIVE

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



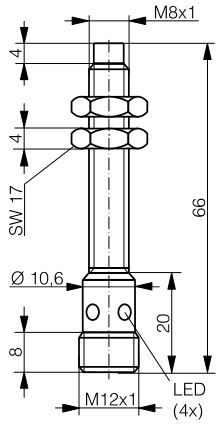
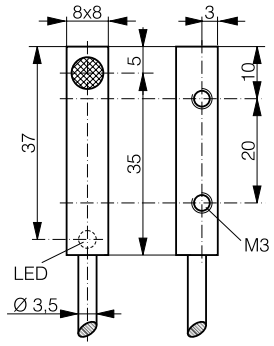
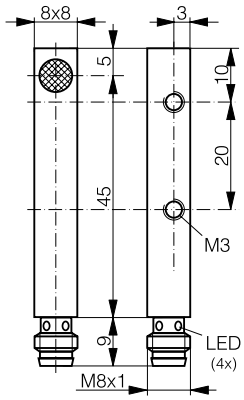
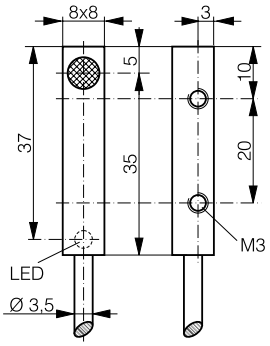




* IO-Link available from Q4/18

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

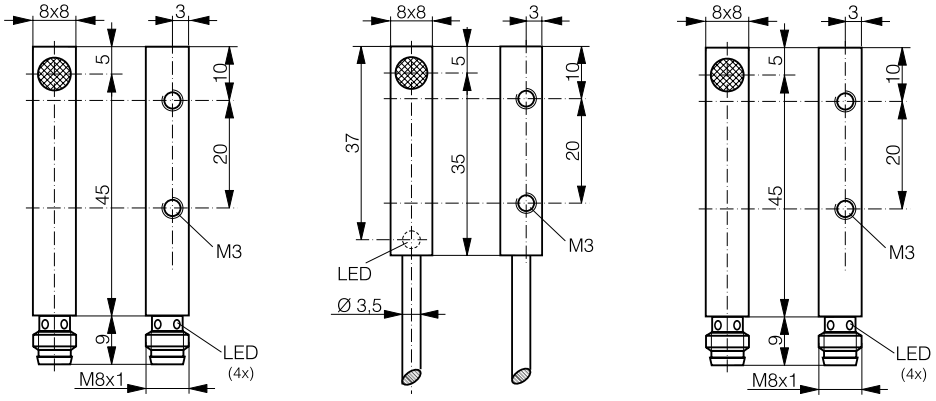
BASIC

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

BASIC

INDUCTIVE

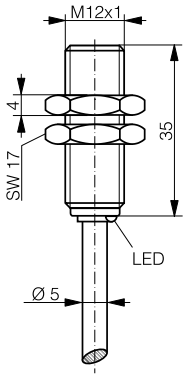
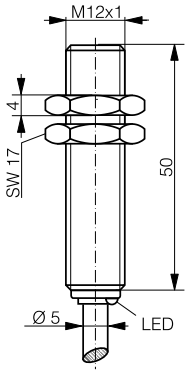
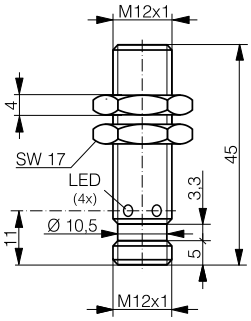
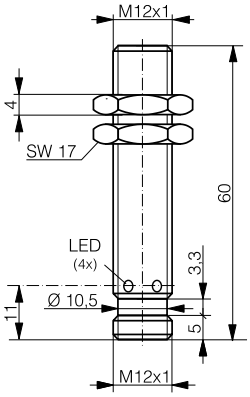
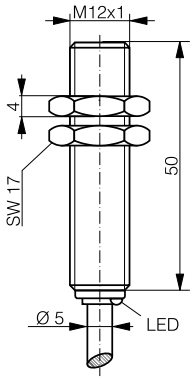
FAMILY	CLASSICS	EXTRA DISTANCE	EXTRA DISTANCE
HOUSING SIZE	☐ 8 x 8	☐ 8 x 8	☐ 8 x 8
OPERATING DISTANCE MM	2	3	3



* 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

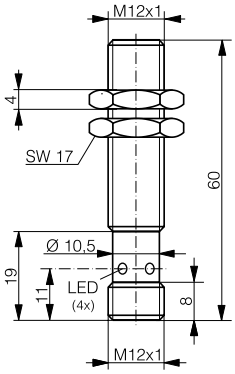
CLASSICS	CLASSICS	CLASSICS	CLASSICS	FULL INOX
M12	M12	M12	M12	M12
2	2	2	2	3
				
				
IO-Link	IO-Link	IO-Link	IO-Link	IO-Link
Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Stainless steel V2A
PVC cable	PVC cable	Connector S12	Connector S12	PUR cable
IP 67	IP 67	IP 67	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	

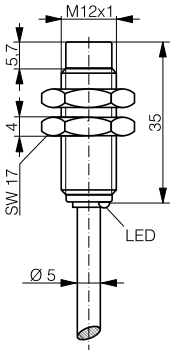
BASIC

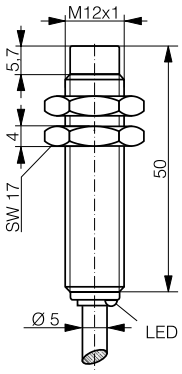
INDUCTIVE

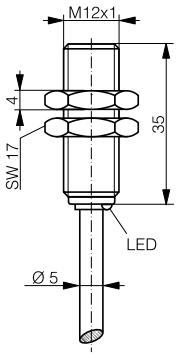
FAMILY	FULL INOX	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE	M12	M12	M12	M12
OPERATING DISTANCE MM	3	4	4	4



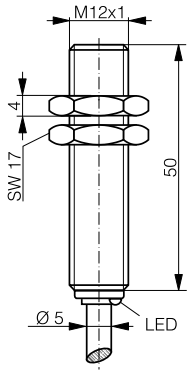
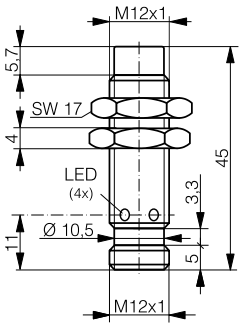
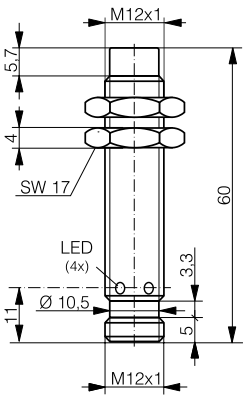
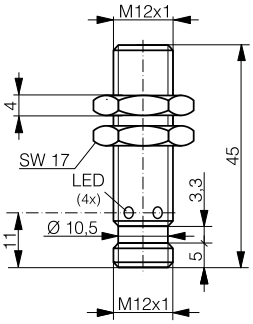






DATA	IO-Link	IO-Link	IO-Link	IO-Link
Housing material	Stainless steel V2A	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Connection	Connector S12	PVC cable	PVC cable	PVC cable
Degree of protection	IP 68 & IP 69K	IP 67	IP 67	IP 67
Mounting	Embeddable	Non-embeddable	Non-embeddable	Embeddable
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

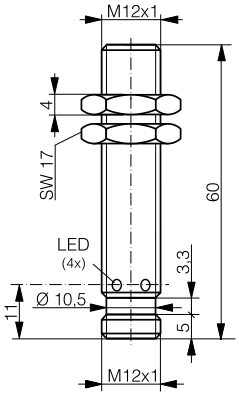
BASIC

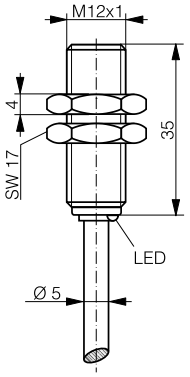
CLASSICS	CLASSICS	CLASSICS	CLASSICS
M12	M12	M12	M12
4	4	4	4
			
			
IO-Link	IO-Link	IO-Link	IO-Link
Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
PVC cable	Connector S12	Connector S12	Connector S12
IP 67	IP 67	IP 67	IP 67
Embeddable	Non-embeddable	Non-embeddable	Embeddable
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

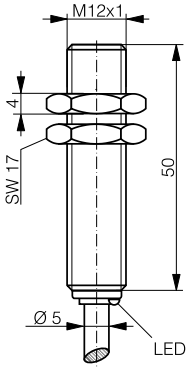
BASIC

INDUCTIVE

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





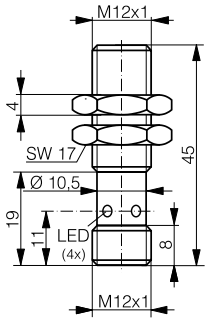


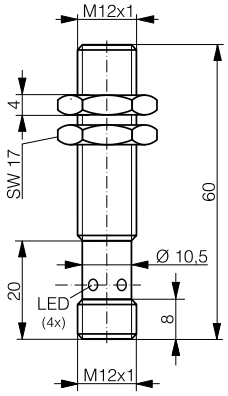
* IO-Link available from Q4/18

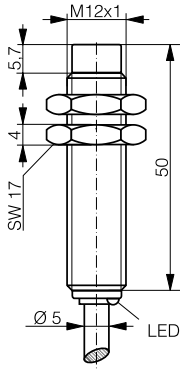
DATA	IO-Link	* IO-Link	* IO-Link
Housing material	Nickel-plated brass	Chrome-plated brass	Chrome-plated brass
Connection	Connector S12	PVC cable	PVC cable
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Quasi-embeddable	Quasi-embeddable
Max. switching frequency	2500 Hz	800 Hz	800 Hz
Supply 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

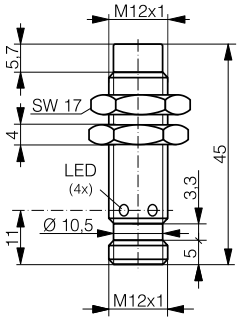
BASIC

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







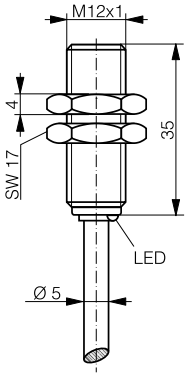


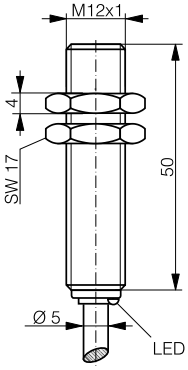
* IO-Link	* IO-Link	IO-Link	IO-Link
Chrome-plated brass	Chrome-plated brass	Nickel-plated brass	Nickel-plated brass
Connector S12	Connector S12	PVC cable	Connector S12
IP 67	IP 67	IP 67	IP 67
Quasi-embeddable	Quasi-embeddable	Non-embeddable	Non-embeddable
800 Hz	800 Hz	1400 Hz	1400 Hz
10 ... 30 VDC	10 ... 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

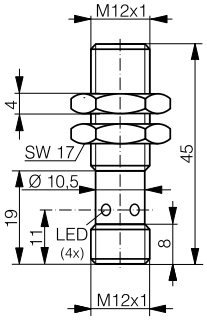
BASIC

INDUCTIVE

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



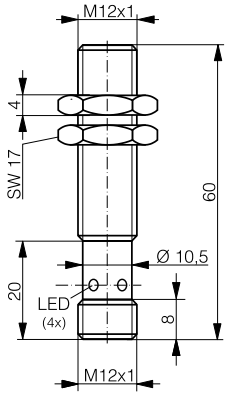
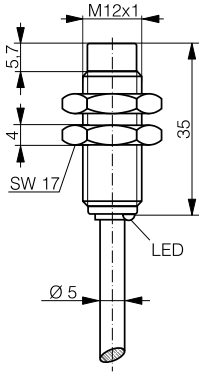
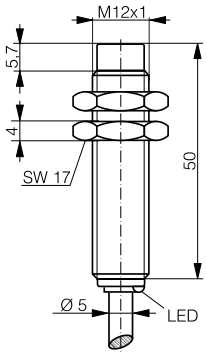
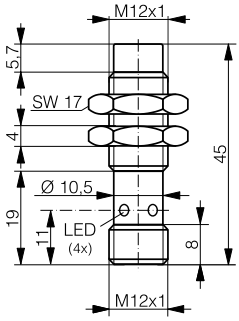




* IO-Link available from Q4/18

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

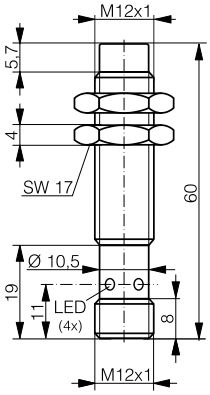
EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE
M12	M12	M12	M12
8	10	10	10
			
			
* IO-Link	* IO-Link	* IO-Link	* IO-Link
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connector S12	PVC cable	PVC cable	Connector S12
IP 67	IP 67	IP 67	IP 67
Quasi-embeddable	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

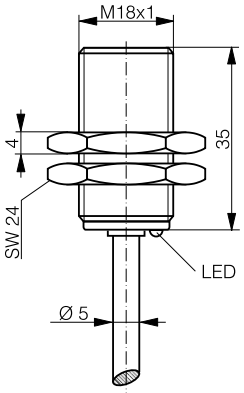
BASIC

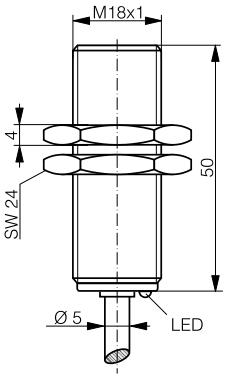
INDUCTIVE

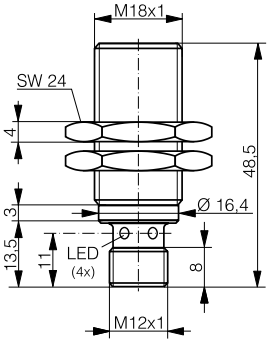
FAMILY	EXTRA DISTANCE	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE	M12	M18	M18	M18
OPERATING DISTANCE MM	10	5	5	5





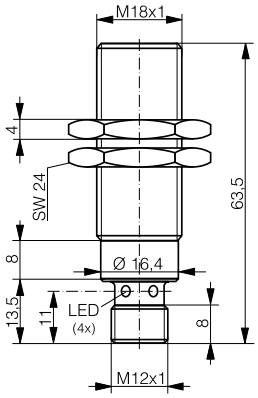
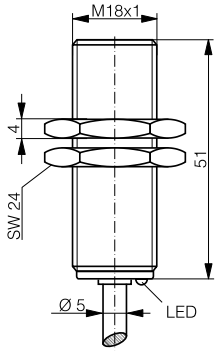
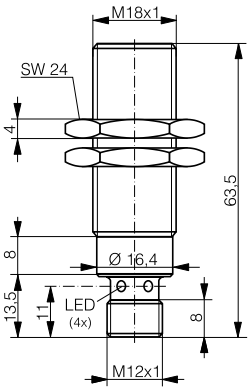
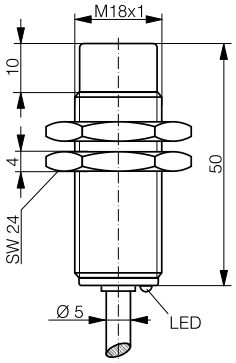
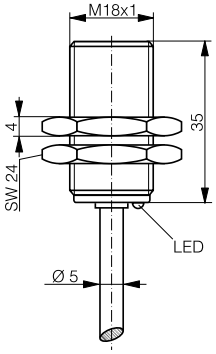




* IO-Link available from Q4/18

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

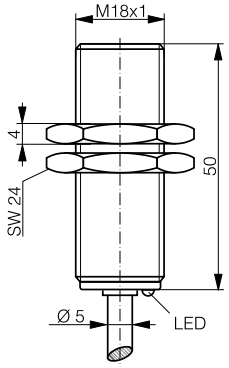
BASIC

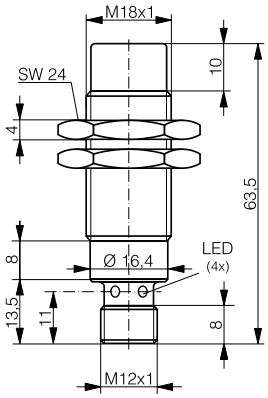
CLASSICS	FULL INOX	FULL INOX	CLASSICS	CLASSICS
M18	M18	M18	M18	M18
5	5	5	8	8
				
				
IO-Link	IO-Link	IO-Link	IO-Link	IO-Link
Nickel-plated brass	Stainless steel V2A	Stainless steel V2A	Nickel-plated brass	Nickel-plated brass
Connector S12	PUR cable	Connector S12	PVC cable	PVC cable
IP 67	IP 68	IP 68 & 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

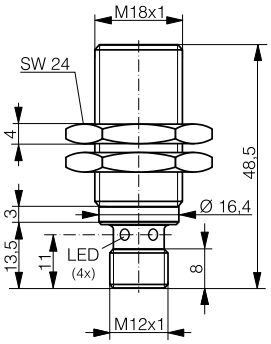
BASIC

INDUCTIVE

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

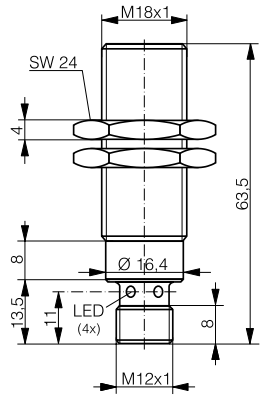
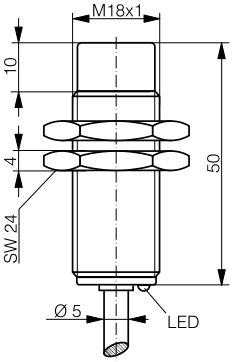
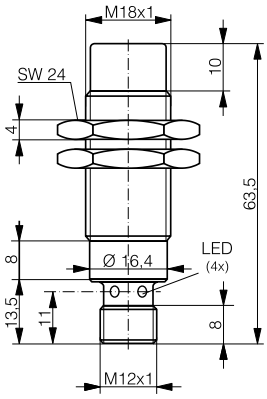
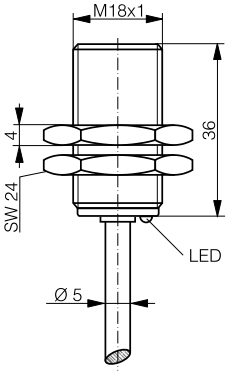






DATA	IO-Link	IO-Link	IO-Link
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Connection	PVC cable	Connector S12	Connector S12
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Non-embeddable	Embeddable
Max. switching frequency	1500 Hz	2000 Hz	1500 Hz
Supply voltage 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
			
			

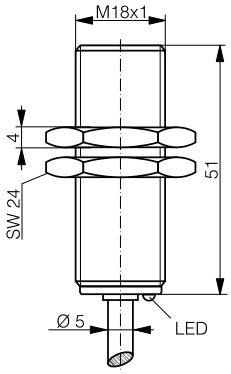
* IO-Link available from Q4/18

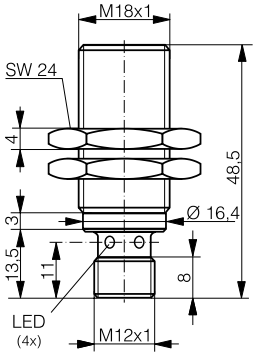
IO-Link	IO-Link	IO-Link	* IO-Link
Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Chrome-plated brass
Connector S12	PVC cable	Connector S12	PVC cable
IP 67	IP 67	IP 67	IP 67
Embeddable	Non-embeddable	Non-embeddable	Quasi-embeddable
1500 Hz	500 Hz	500 Hz	500 Hz
10 … 30 VDC	10 … 30 VDC	10 … 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

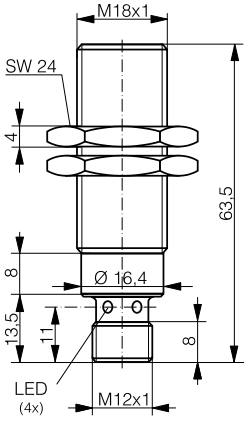
BASIC

INDUCTIVE

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



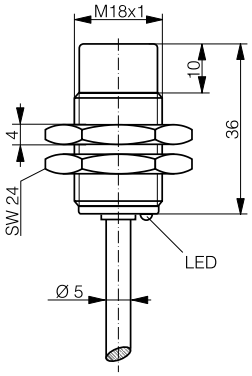
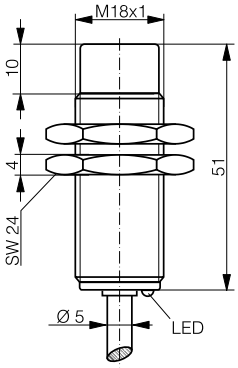
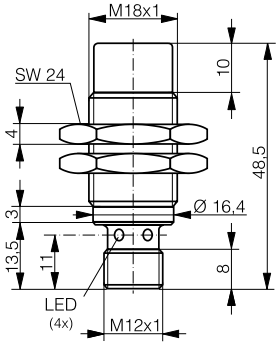
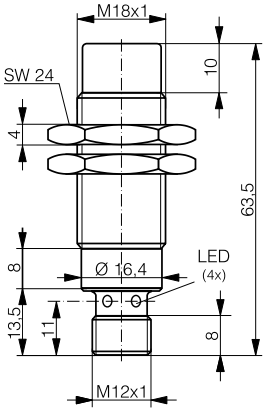




* IO-Link available from Q4/18

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

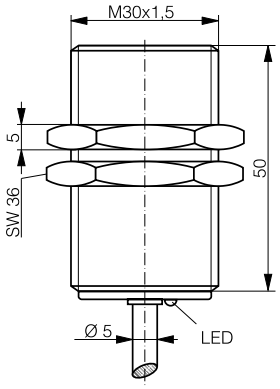
BASIC

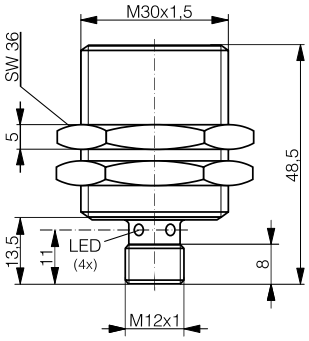
EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE
M18	M18	M18	M18
20	20	20	20
			
			
* IO-Link	* IO-Link	* IO-Link	* IO-Link
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
PVC cable	PVC cable	Connector S12	Connector S12
IP 67	IP 67	IP 67	IP 67
Non-embeddable	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

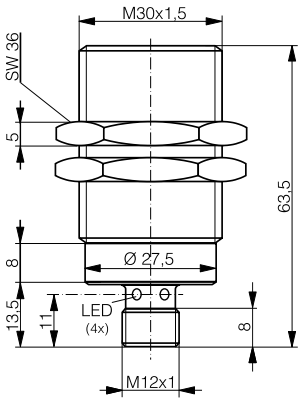
BASIC

INDUCTIVE

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

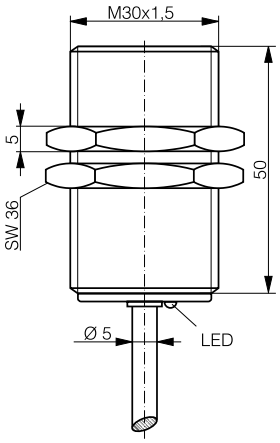
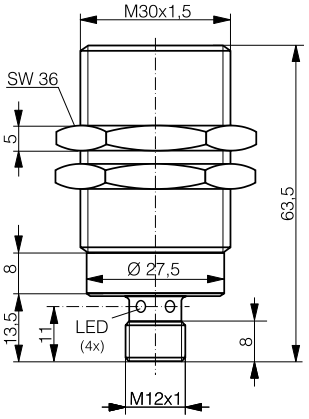
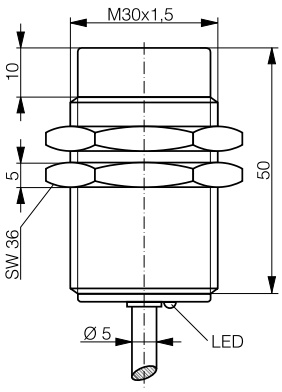
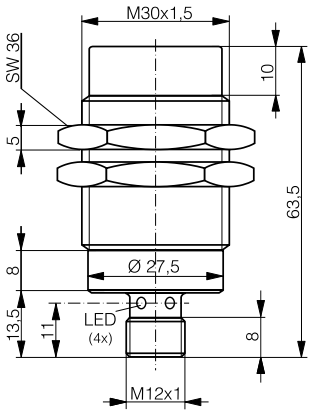






DATA	IO-Link	IO-Link	IO-Link
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Connection	PVC cable	Connector S12	Connector S12
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	1200 Hz	1200 Hz	1200 Hz
Supply voltage range	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

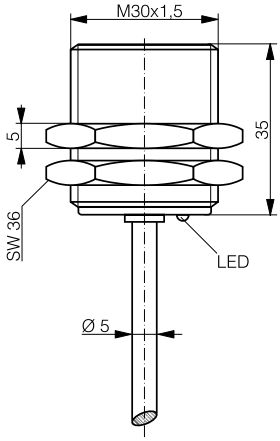
BASIC

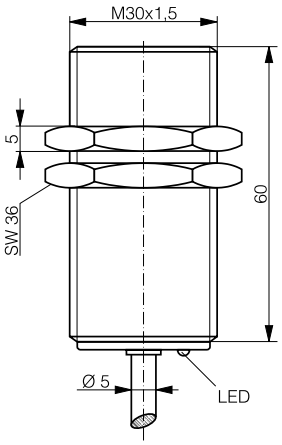
FULL INOX	FULL INOX	CLASSICS	CLASSICS
M30	M30	M30	M30
10	10	15	15
			
			
IO-Link	IO-Link	IO-Link	IO-Link
Stainless steel V2A	Stainless steel V2A	Nickel-plated brass	Nickel-plated brass
PUR cable	Connector S12	PVC cable	Connector S12
IP 68	IP 68 & IP 69K	IP 67	IP 67
Embeddable	Embeddable	Non-embeddable	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

BASIC

INDUCTIVE

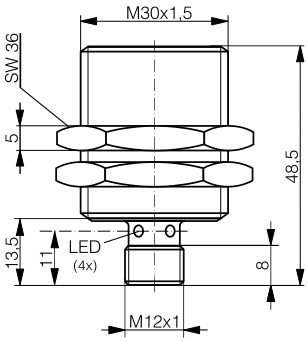
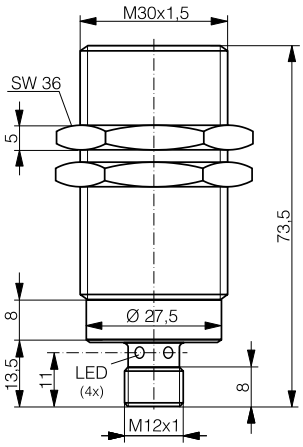
FAMILY	EXTRA DISTANCE	EXTRA DISTANCE
HOUSING SIZE	M30	M30
OPERATING DISTANCE MM	22	22





* IO-Link available from Q4/18

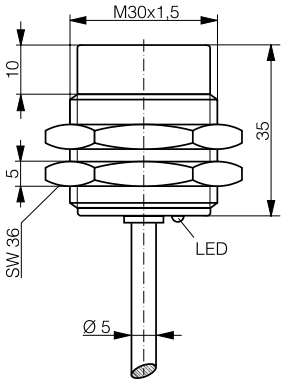
DATA	* IO-Link	* IO-Link
Housing material	Chrome-plated brass	Chrome-plated brass
Connection	PVC cable	PVC cable
Degree of protection	IP 67	IP 67
Mounting	Quasi-embeddable	Quasi-embeddable
Max. switching frequency	200 Hz	200 Hz
Supply voltage range	10 … 30 VDC	10 … 30 VDC
Ambient temperature range	-25 ... +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

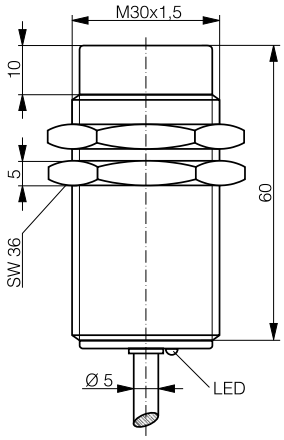
EXTRA DISTANCE	EXTRA DISTANCE
M30	M30
22	22
	
	
* IO-Link	* IO-Link
Chrome-plated brass	Chrome-plated brass
Connector S12	Connector S12
IP 67	IP 67
Quasi-embeddable	Quasi-embeddable
200 Hz	200 Hz
10 … 30 VDC	10 … 30 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 200 mA	≤ 200 mA
DW-AS-503-M30-120	**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

BASIC

INDUCTIVE

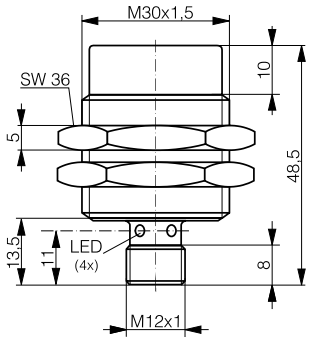
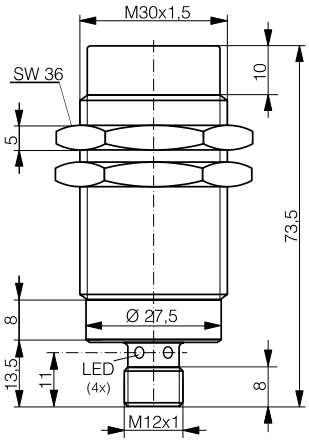
FAMILY	EXTRA DISTANCE	EXTRA DISTANCE
HOUSING SIZE MM	M30	M30
OPERATING DISTANCE MM	40	40





* IO-Link available from Q4/18

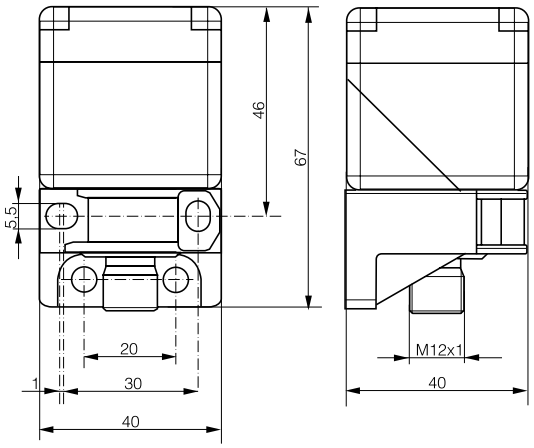
DATA	* IO-Link	* IO-Link
Housing material	Chrome-plated brass	Chrome-plated brass
Connection	PVC cable	PVC cable
Degree of protection	IP 67	IP 67
Mounting	Non-embeddable	Non-embeddable
Max. switching frequency	100 Hz	100 Hz
Supply voltage range	10 … 30 VDC	10 … 30 VDC
Ambient temperature range	-25 ... +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

EXTRA DISTANCE	EXTRA DISTANCE
M30	M30
40	40
	
	
* IO-Link	* IO-Link
Chrome-plated brass	Chrome-plated brass
Connector S12	Connector S12
IP 67	IP 67
Non-embeddable	Non-embeddable
100 Hz	100 Hz
10 … 30 VDC	10 … 30 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 200 mA	≤ 200 mA
DW-AS-513-M30-120	**DW-AS-513-M30-002**
DW-AS-511-M30-120	**DW-AS-511-M30-002**
	DW-AS-514-M30-002
PNP NC, NPN NC	

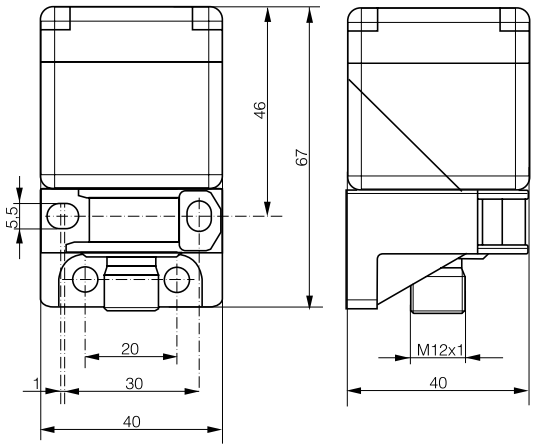
BASIC

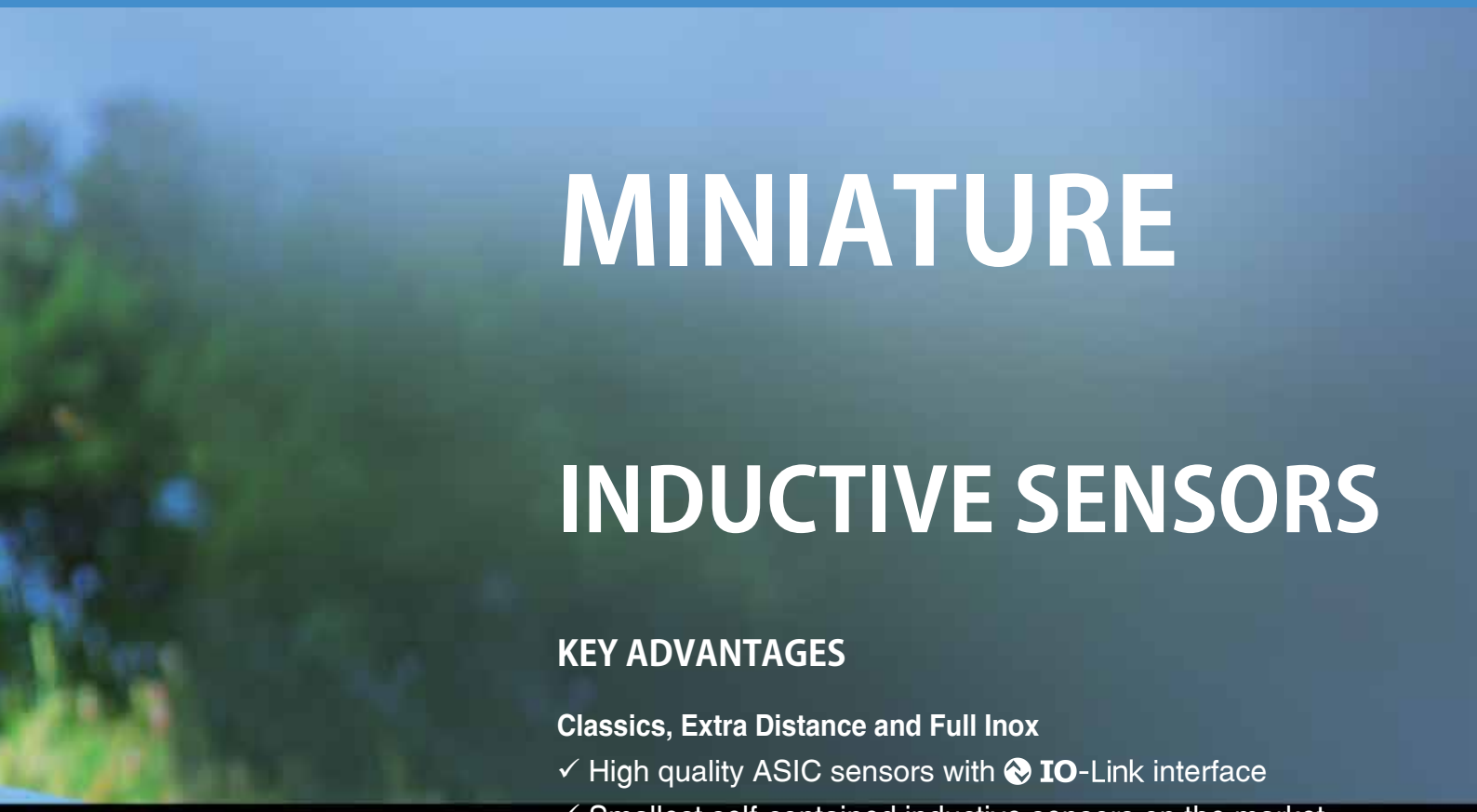
INDUCTIVE

FAMILY	CLASSICS	CLASSICS
HOUSING SIZE MM	☐ 40 x 40	☐ 40 x 40
OPERATING DISTANCE MM	15	20



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		

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**



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

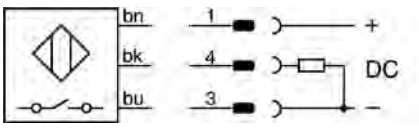
- ✓ Extremely robust one-piece stainless-steel housing
- ✓ Corrosion resistant
- ✓ IP 68 and IP 69K, sea water resistant
- ✓ Pressure resistant up to 80 bar (1160 psi)

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		

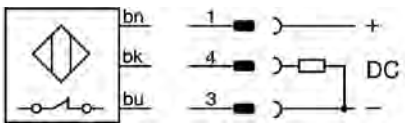
INDUCTIVE

WIRING DIAGRAMS

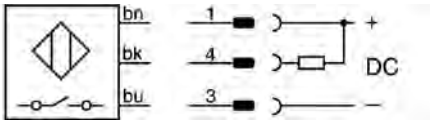
PNP NO



PNP NC



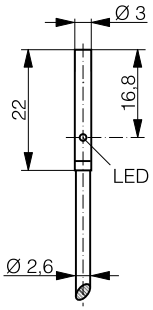
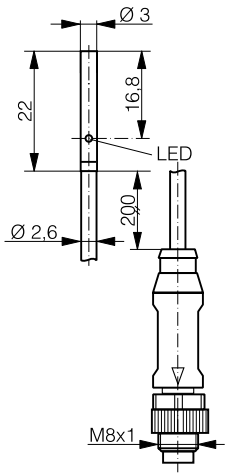
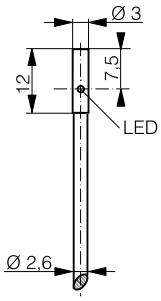
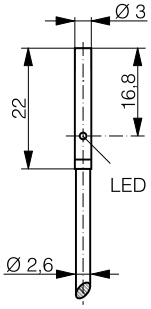
NPN NO



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	

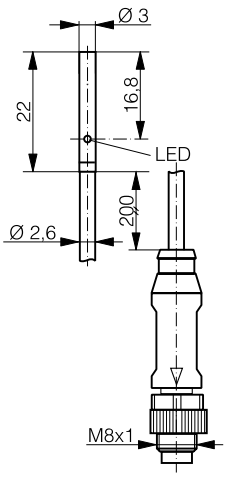
MINIATURE

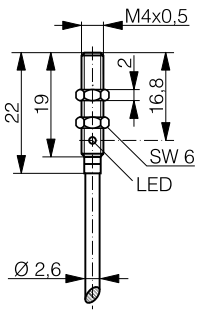
CLASSICS	CLASSICS	CLASSICS	CLASSICS
Ø 3	Ø 3	Ø 3	Ø 3
0.6	0.6	1	1
			
			
IO-Link	IO-Link	IO-Link	IO-Link
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
PUR cable	PUR cable / Connector S8	PUR cable	PUR cable
IP 67	IP 67	IP 67	IP 67
Embeddable	Embeddable	Embeddable	Embeddable
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

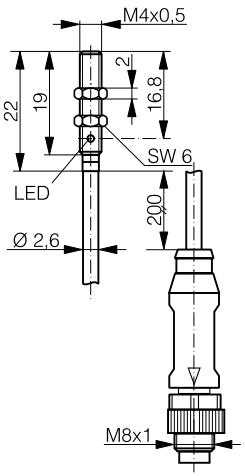
MINIATURE

INDUCTIVE

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

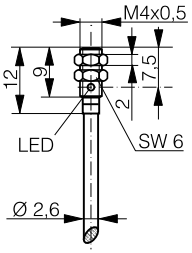
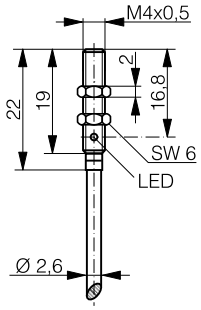
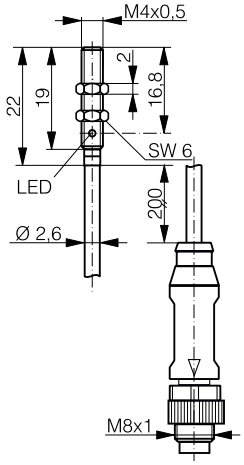
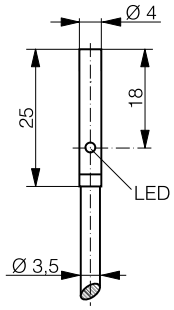






DATA	IO-Link	IO-Link	IO-Link
Housing material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connection	PUR cable / Connector S8	PUR cable	PUR cable / Connector S8
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	3000 Hz	5000 Hz	5000 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

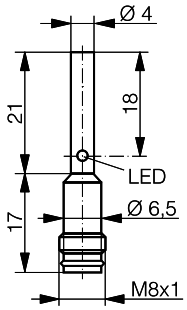
MINIATURE

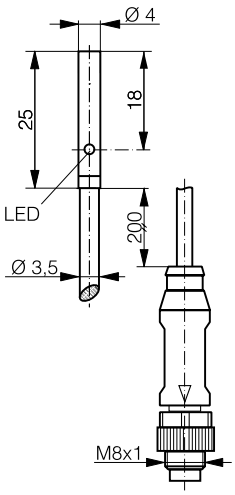
CLASSICS	CLASSICS	CLASSICS	CLASSICS
M4	M4	M4	Ø 4
1	1	1	0.8
			
			
IO-Link	IO-Link	IO-Link	IO-Link
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
PUR cable	PUR cable	PUR cable / Connector S8	PVC cable
IP 67	IP 67	IP 67	IP 67
Embeddable	Embeddable	Embeddable	Embeddable
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

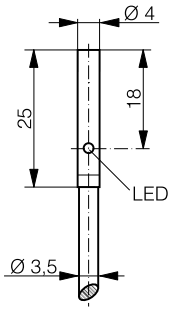
MINIATURE

INDUCTIVE

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

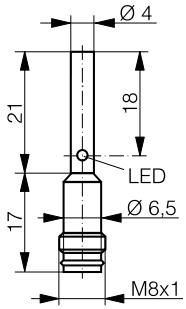
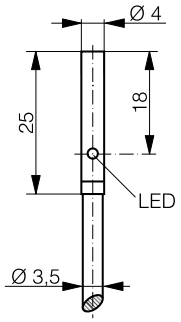
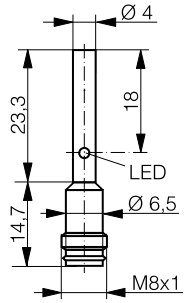
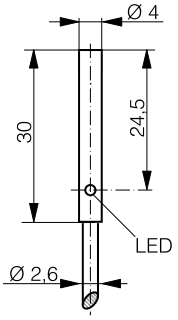






DATA	IO-Link	IO-Link	IO-Link
Housing material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connection	Connector S8	PVC cable / Connector S8	PVC cable
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	5000 Hz	5000 Hz	3000 Hz
Supply 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

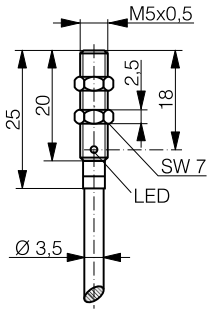
CLASSICS	EXTRA DISTANCE	EXTRA DISTANCE	FULL INOX
Ø 4	Ø 4	Ø 4	Ø 4
1.5	2.5	2.5	3
			
			
IO-Link	* IO-Link	* IO-Link	IO-Link
Stainless steel V2A	Nickel silver	Nickel silver	Stainless steel V2A
Connector S8	PVC cable	Connector S8	PVC cable
IP 67	IP 67	IP 67	IP 68 / IP 69K
Embeddable	Embeddable	Embeddable	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

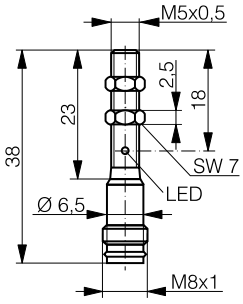
* IO-Link available from Q4/18

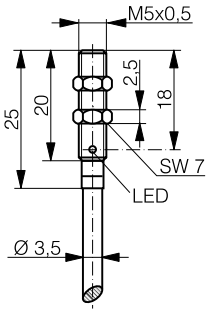
MINIATURE

INDUCTIVE

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

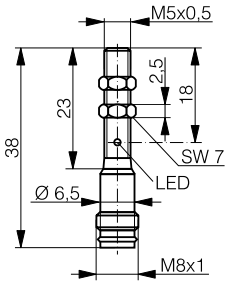
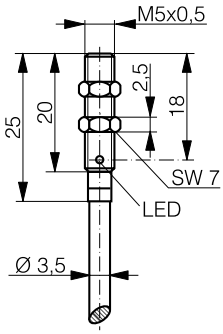
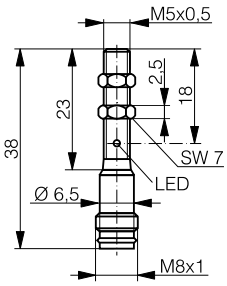






DATA	IO-Link	IO-Link	IO-Link
Housing material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connection	PVC cable	Connector S8	PVC cable
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	5000 Hz	5000 Hz	3000 Hz
Supply voltage range	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

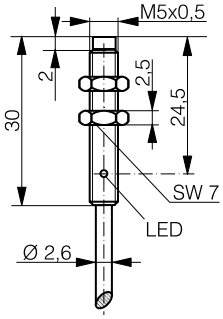
CLASSICS	EXTRA DISTANCE	EXTRA DISTANCE
M5	M5	M5
1.5	2.5	2.5
		
		
IO-Link	* IO-Link	* IO-Link
Stainless steel V2A	Nickel silver	Nickel silver
Connector S8	PVC cable	Connector S8
IP 67	IP 67	IP 67
Embeddable	Embeddable	Embeddable
3000 Hz	800 Hz	800 Hz
10 … 30 VDC	10 … 30 VDC	10 … 30 VDC
-25 ... +70°C / -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

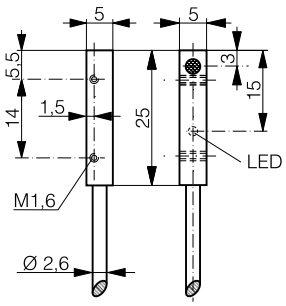
* IO-Link available from Q4/18

MINIATURE

INDUCTIVE

FAMILY	FULL INOX	CLASSICS
HOUSING SIZE MM	M5	☐ 5 x 5
OPERATING DISTANCE MM	3	0.8



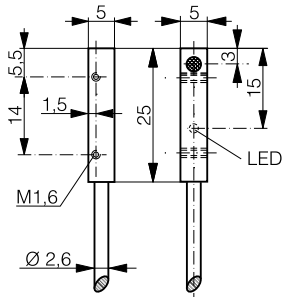


DATA	IO-Link	IO-Link
Housing material	Stainless steel V2A	Chrome-plated brass
Connection	PVC cable	PUR cable
Degree of protection	IP 68 / IP 69K	IP 67
Mounting	Non-embeddable	Embeddable
Max. switching frequency	1200 Hz	5000 Hz
Supply voltage range	10 … 30 VDC	10 … 30 VDC
Ambient temperature range	-25 ... +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

CLASSICS

☐ 5 x 5

1.5



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

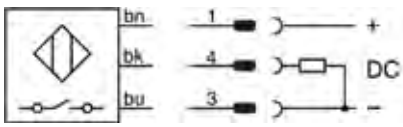
- ✓ Mechanically and chemically extremely robust
- ✓ Corrosion resistant
- ✓ IP 68 and IP 69K, sea water resistant
- ✓ Pressure resistant up to 100 bar (1451 psi)
- ✓ IO-Link

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

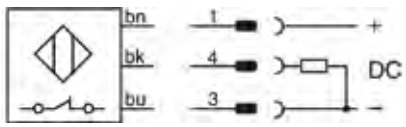
INDUCTIVE

WIRING DIAGRAMS

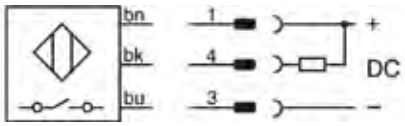
PNP NO



PNP NC



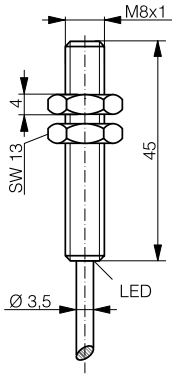
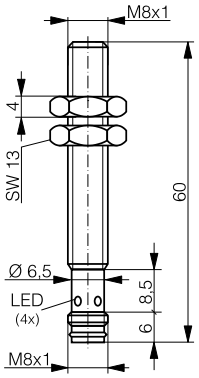
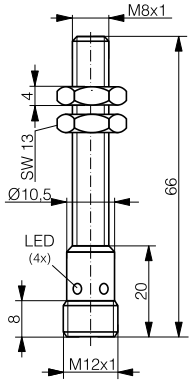
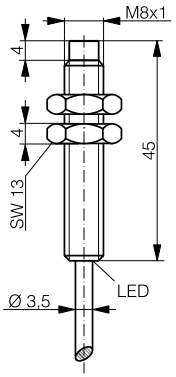
NPN NO



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	

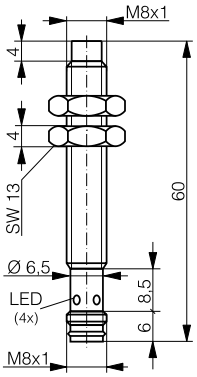
EXTREME

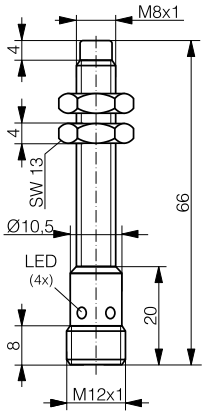
FULL INOX	FULL INOX	FULL INOX	FULL INOX
M8	M8	M8	M8
3	3	3	6
			
			
IO-Link	IO-Link	IO-Link	IO-Link
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
PUR cable	Connector S8	Connector S12	PUR 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

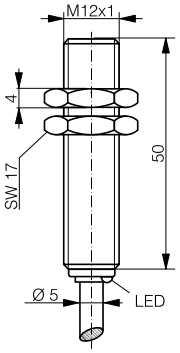
EXTREME

INDUCTIVE

FAMILY	FULL INOX	FULL INOX	FULL INOX
HOUSING SIZE	M8	M8	M12
OPERATING DISTANCE MM	6	6	2 (4)



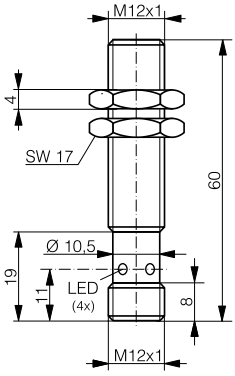


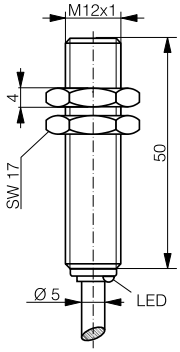


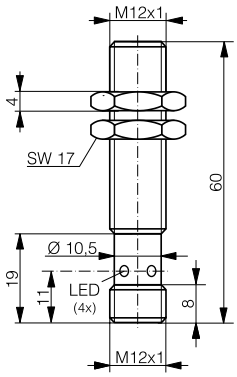
DATA	IO-Link	IO-Link	IO-Link
Sensing face material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Housing material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connection	Connector S8	Connector S12	PUR cable
Degree of protection	IP 67	IP 67	IP 68 / IP 69K
Mounting	Non-embeddable	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)

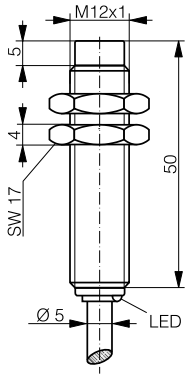
EXTREME

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







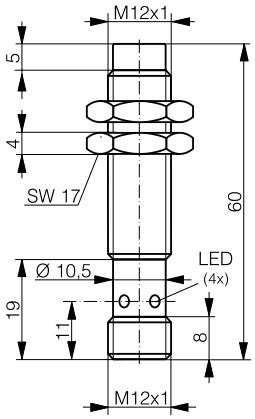


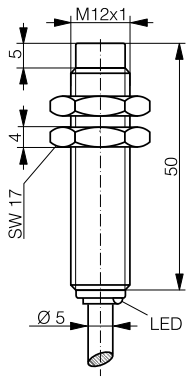
IO-Link	IO-Link	IO-Link	IO-Link
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connector S12	PUR cable	Connector S12	PUR cable
IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K
Embeddable	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

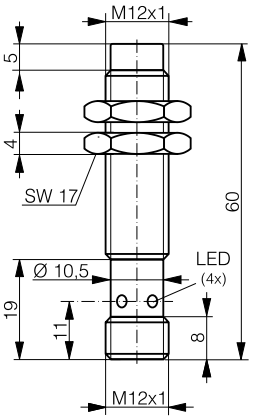
EXTREME

INDUCTIVE

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

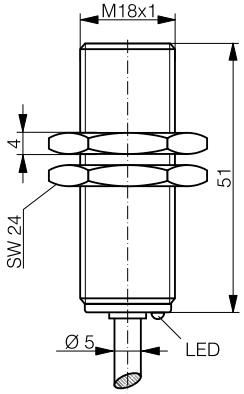
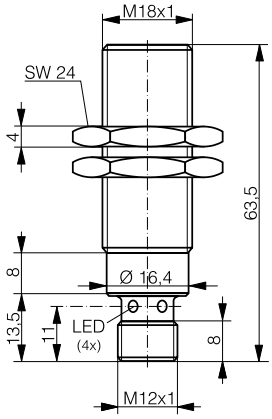
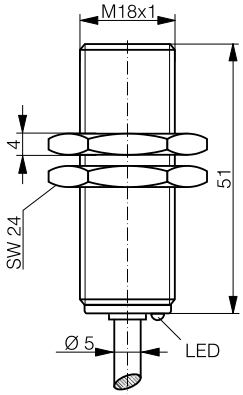
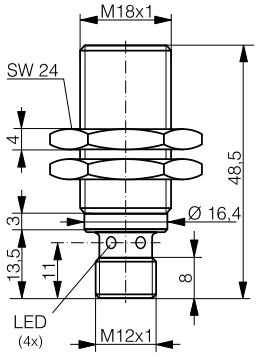






DATA	IO-Link	IO-Link	IO-Link
Sensing face material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Housing material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connection	Connector S12	PUR cable	Connector S12
Degree of protection	IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K
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		

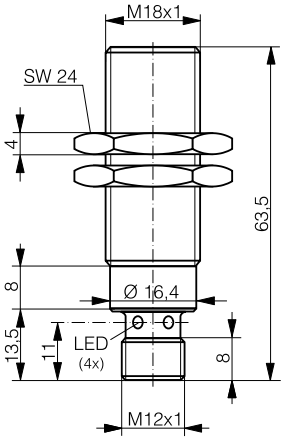
EXTREME

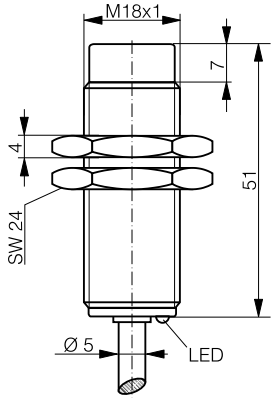
FULL INOX	FULL INOX	FULL INOX	FULL INOX
M18	M18	M18	M18
5	5 (8)	10	10
			
			
IO-Link	IO-Link	IO-Link	IO-Link
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
PUR cable	Connector S12	PUR cable	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

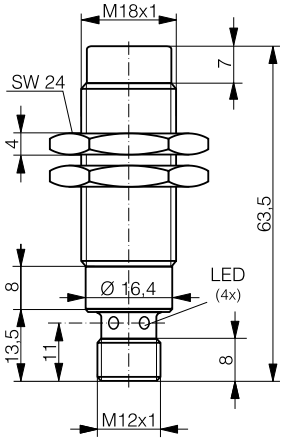
EXTREME

INDUCTIVE

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



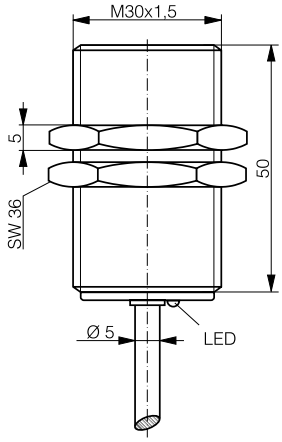


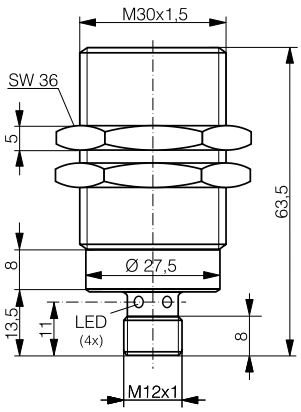


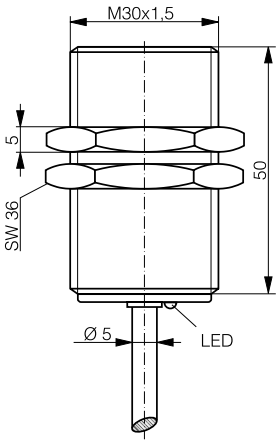
DATA	IO-Link	IO-Link	IO-Link
Sensing face material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Housing material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connection	Connector S12	PUR cable	Connector S12
Degree of protection	IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K
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

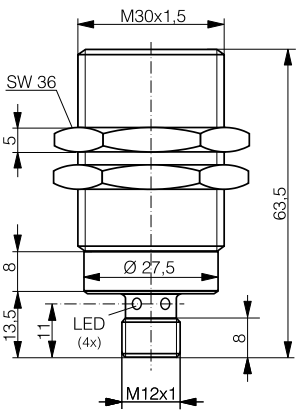
EXTREME

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







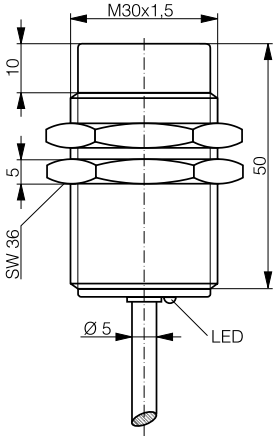


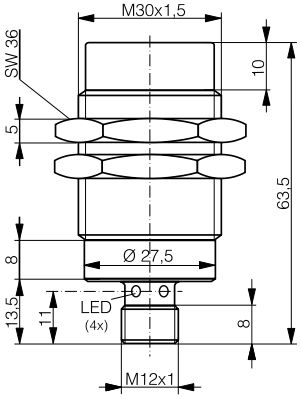
IO-Link	IO-Link	IO-Link	IO-Link
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
PUR cable	Connector S12	PUR cable	Connector S12
IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K
Embeddable	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

EXTREME

INDUCTIVE

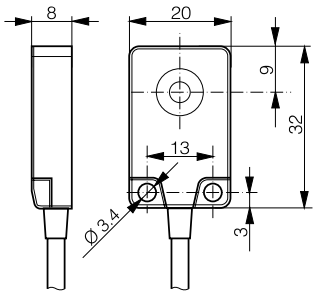
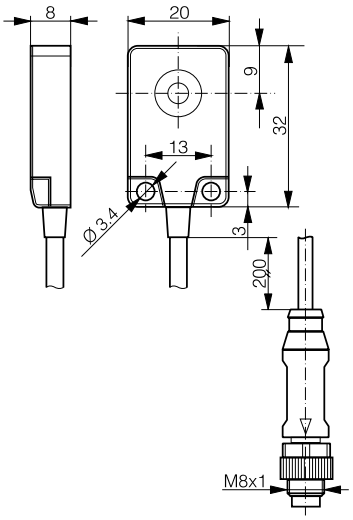
FAMILY	FULL INOX	FULL INOX
HOUSING SIZE	M30	M30
OPERATING DISTANCE MM	40	40





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
	
	
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

INDUCTIVE SENSORS

KEY ADVANTAGES

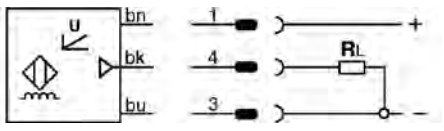
- ✓ Longest sensing ranges
- ✓ Best temperature stability
- ✓ Excellent repeat accuracy
- ✓ Resolution in µm range

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

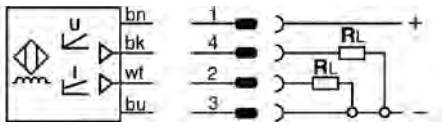
INDUCTIVE

WIRING DIAGRAMS

Analog C8/M8



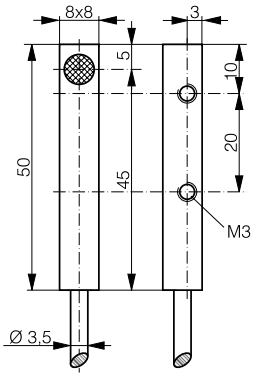
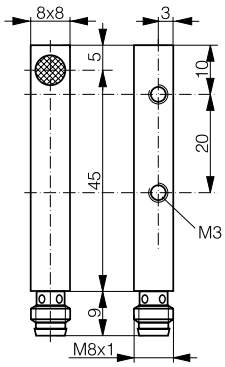
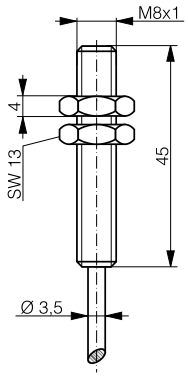
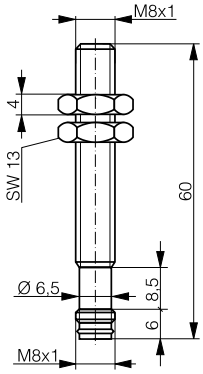
Analog M12/M18/M30



DATA

Bandwidth (-3 dB)
Output voltage
Housing material
Connection
Degree of protection
Mounting
Supply voltage range
Ambient temperature range
Output current
Output 0...10 V
Output 0...5 V
Other types available

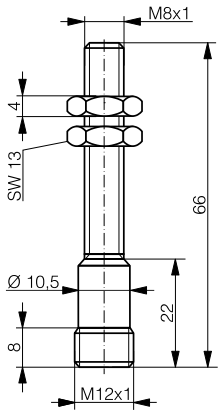
ANALOG OUTPUT

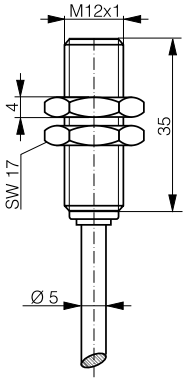
EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE
☐ 8 x 8	☐ 8 x 8	M8	M8
0 ... 4	0 ... 4	0 ... 4	0 ... 4
			
			
1,600 Hz (at s = 2 mm)	1,600 Hz (at s = 2 mm)	1,600 Hz (at s = 2 mm)	1,600 Hz (at s = 2 mm)
0 ... 10 V	0 ... 10 V	0 ... 5 V / 0 ... 10 V (-390)	0 ... 10 V
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
PUR cable	Connector S8	PUR cable	Connector S8
IP 67	IP 67	IP 67	IP 67
Quasi-embeddable	Quasi-embeddable	Quasi-embeddable	Quasi-embeddable
15 ... 30 VDC	15 ... 30 VDC	10 ... 30 VDC/15 ... 30 VDC (-390)	15 ... 30 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
-	-	-	-
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

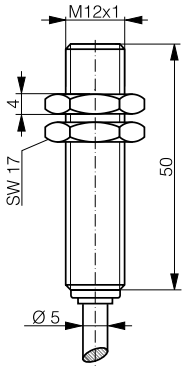
ANALOG OUTPUT

INDUCTIVE

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

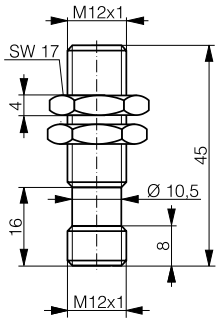
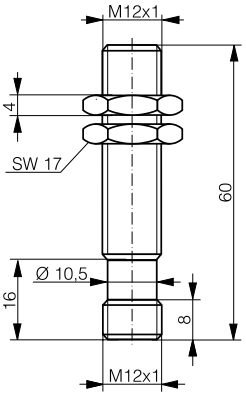
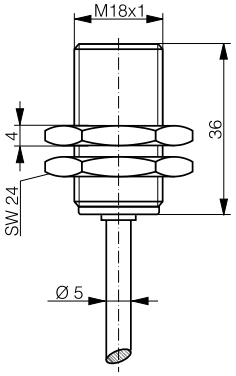
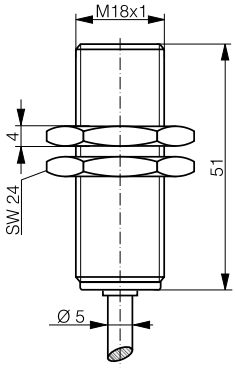






DATA			
Bandwidth (-3 dB)	1,600 Hz (at s = 2 mm)	1,000 Hz (at s = 3 mm)	1,000 Hz (at s = 3 mm)
Output voltage	0 ... 10 V	0 ... 5 V / 0 ... 10 V (-390)	0 ... 5 V / 0 ... 10 V (-390)
Housing material	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connection	Connector S12	PUR cable	PUR cable
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		

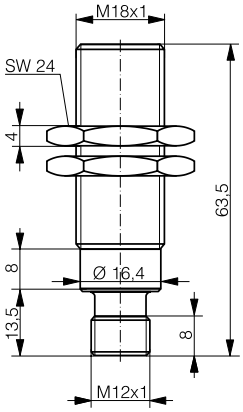
ANALOG OUTPUT

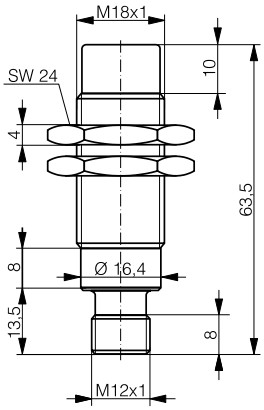
EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE
M12	M12	M18	M18
0 ... 6	0 ... 6	0 ... 10	0 ... 10
			
			
1,000 Hz (at s = 3 mm)	1,000 Hz (at s = 3 mm)	500 Hz (at s = 5 mm)	500 Hz (at s = 5 mm)
0 ... 5 V / 0 ... 10 V (-320)	0 ... 5 V / 0 ... 10 V (-390)	0 ... 5 V / 0 ... 10 V (-320)	0 ... 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

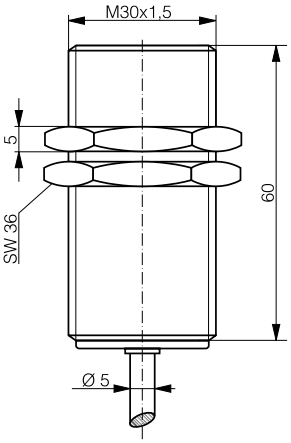
ANALOG OUTPUT

INDUCTIVE

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

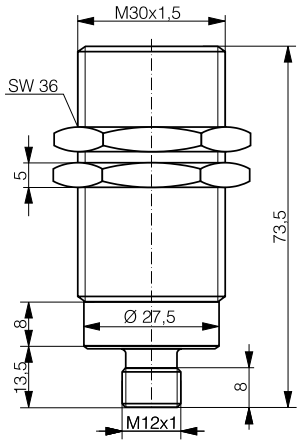
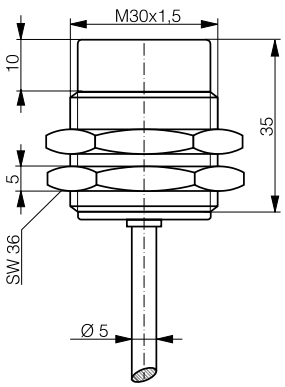
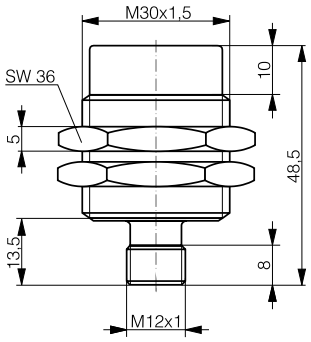
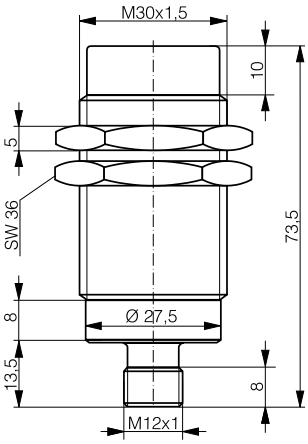


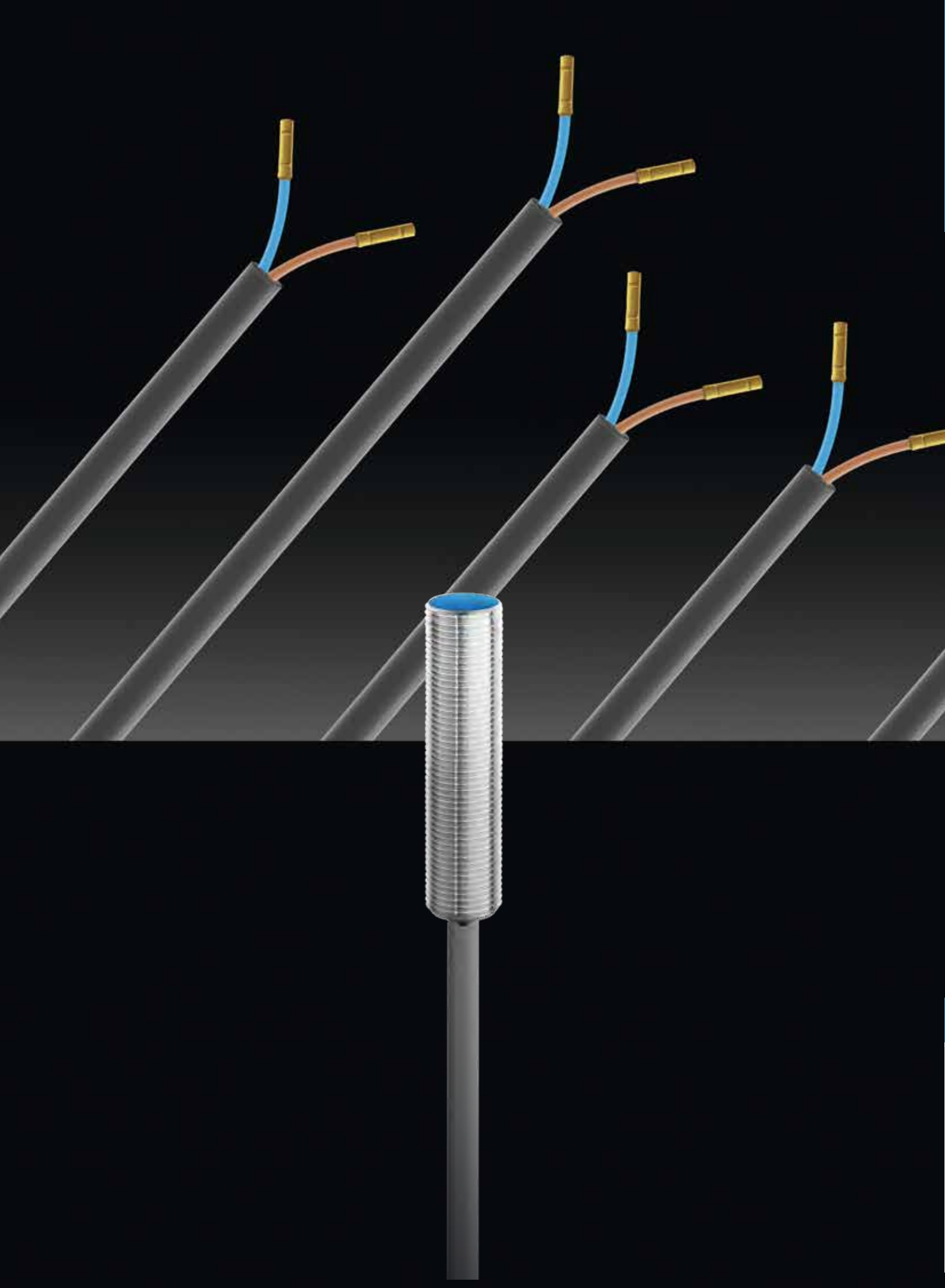




DATA			
Bandwidth (-3 dB)	500 Hz (at s = 5 mm)	250 Hz (at s = 10 mm)	200 Hz (at s = 10 mm)
Output voltage	0 ... 5 V / 0 ... 10 V (-390)	0 ... 5 V / 0 ... 10 V (-390)	0 ... 5 V / 0 ... 10 V (-390)
Housing material	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connection	Connector S12	Connector 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
			
			
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



EASY INSTALLATION AND HIGH SWITCHING FREQUENCY

2-WIRE

INDUCTIVE SENSORS

KEY ADVANTAGES

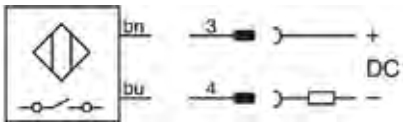
- ✓ Two-wire sensors for series connection
- ✓ Sizes from Ø 3 mm to M30 and 5 x 5 mm
- ✓ DC and AC/DC types
- ✓ NAMUR types with switching frequencies up to 10,000 Hz

RANGE OVERVIEW	Housing size	Classics
2-WIRE	∅ 3 mm	p. 103
	M4	p. 103
	∅ 4 mm	p. 104
	M5	p. 105
	C5	p. 105
	∅ 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

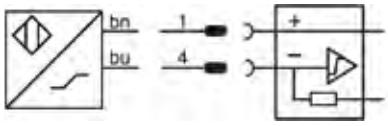
INDUCTIVE

WIRING DIAGRAMS

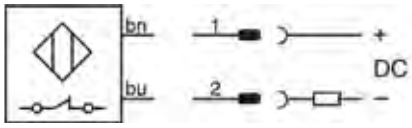
2-wire DC NO



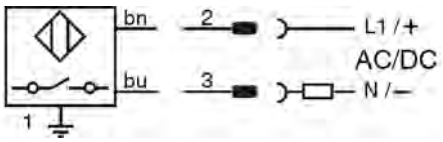
NAMUR



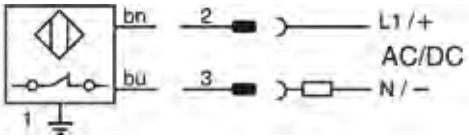
2-wire DC NC



2-wire AC/DC NO



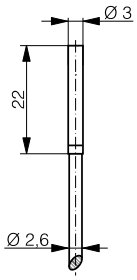
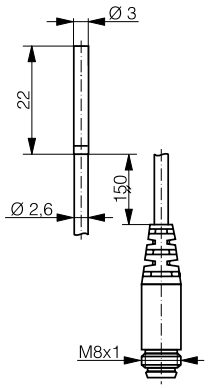
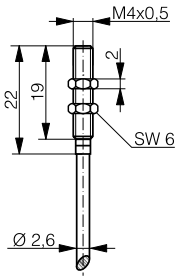
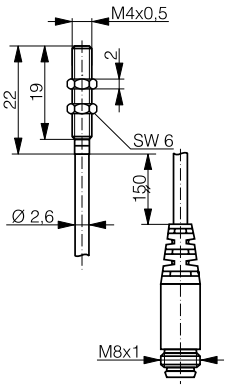
2-wire AC/DC NC



DATA

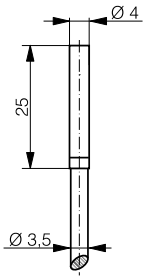
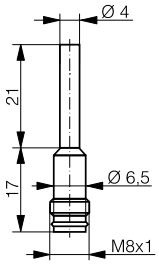
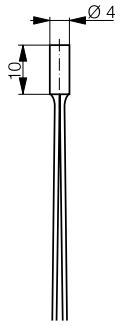
Housing material
Connection
Degree of protection
Mounting
Max. switching frequency
Supply voltage range
Ambient temperature range
Output current
NAMUR
Other types available
* damped / non-damped

2-WIRE

CLASSICS	CLASSICS	CLASSICS	CLASSICS
Ø 3	Ø 3	M4	M4
0.6	0.6	0.6	0.6
			
			
NAMUR	**NAMUR**	**NAMUR**	**NAMUR**
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
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**

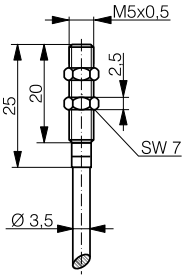
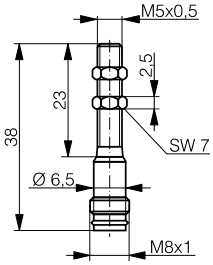
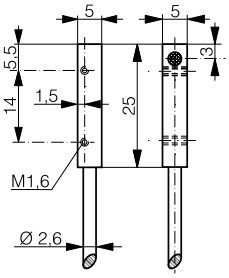
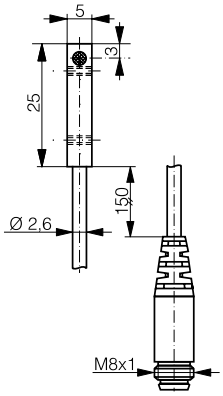
2-WIRE

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			

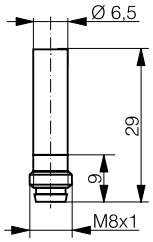
2-WIRE

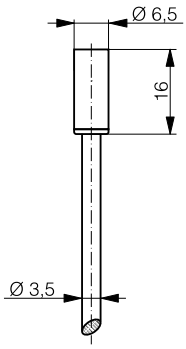
CLASSICS	CLASSICS	CLASSICS	CLASSICS
M5	M5	5 x 5	5 x 5
0.8	0.8	0.8	0.8
			
			
NAMUR	**NAMUR**	**NAMUR**	**NAMUR**
Stainless steel V2A	Stainless steel V2A	Chrome-plated brass	Chrome-plated brass
PVC cable	Connector S8	PUR cable	PUR cable / Connector S8
IP 67	IP 67	IP 67	IP 67
Embeddable	Embeddable	Embeddable	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**

2-WIRE

INDUCTIVE

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



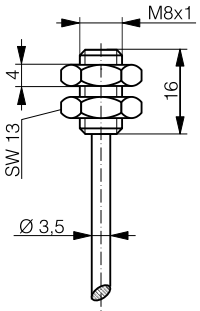
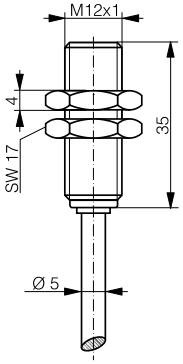
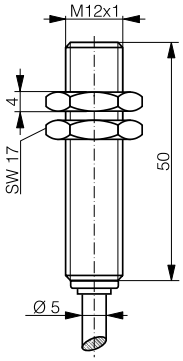


NAMUR

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		

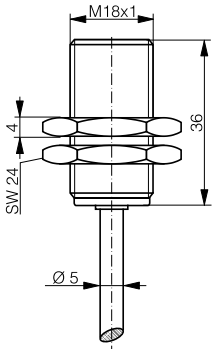
2-WIRE

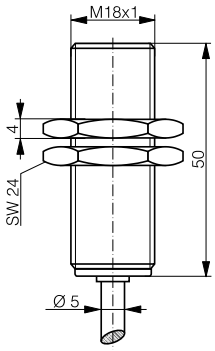
CLASSICS	CLASSICS	CLASSICS
M8	M12	M12
1.5	2	2
		
		
NAMUR	**NAMUR**	**NAMUR**
Stainless steel V2A	Chrome-plated brass	Chrome-plated brass
PVC cable	PVC cable	PVC cable
IP 67	IP 67	IP 67
Embeddable	Embeddable	Embeddable
10,000 Hz	2500 Hz	2500 Hz
7.7 … 9 VDC	7.7 … 9 VDC	7.7 … 9 VDC
-25 ... +70°C / -13 … +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

2-WIRE

INDUCTIVE

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

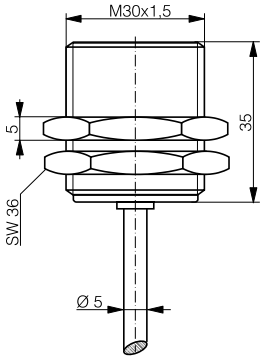
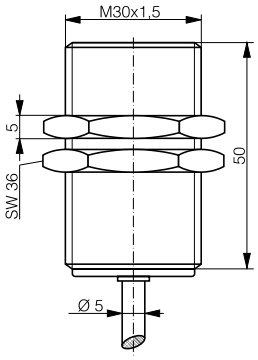




NAMUR

NAMUR

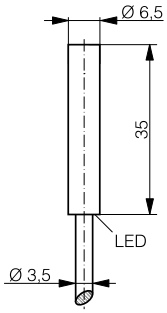
DATA		
Housing material	Chrome-plated brass	Chrome-plated brass
Connection	PVC cable	PVC cable
Degree of protection	IP 67	IP 67
Mounting	Embeddable	Embeddable
Max. switching frequency	1000 Hz	10,000 Hz
Supply voltage range	7.7 … 9 VDC	7.7 … 9 VDC
Ambient temperature range	-25 ... +70°C / -13 … +158°F	-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		

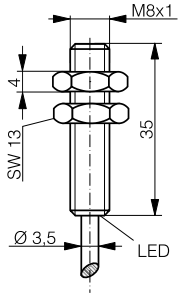
CLASSICS	CLASSICS
M30	M30
10	10
	
	
NAMUR	**NAMUR**
Chrome-plated brass	Chrome-plated brass
PVC cable	PVC cable
IP 67	IP 67
Embeddable	Embeddable
400 Hz	400 Hz
7.7 ... 9 VDC	7.7 ... 9 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 1 / ≥ 2.2 mA*	≤ 1 / ≥ 2.2 mA*
DW-AD-605-M30-120	**DW-AD-605-M30**

2-WIRE

INDUCTIVE

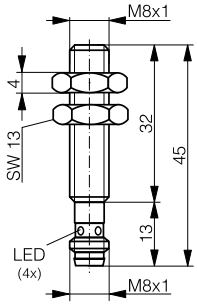
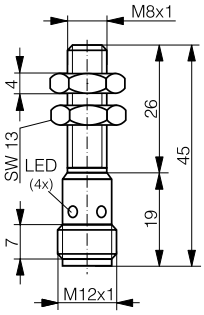
FAMILY	CLASSICS	CLASSICS
HOUSING SIZE MM	Ø 6.5	M8
OPERATING DISTANCE MM	1.5	1.5





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		

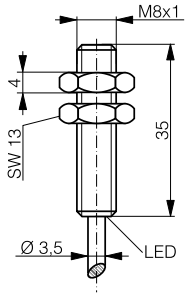
2-WIRE

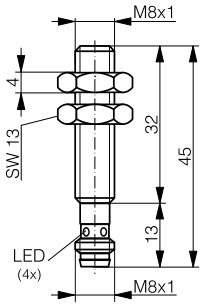
CLASSICS	CLASSICS
M8	M8
1.5	1.5
	
	
Stainless steel V2A	Stainless steel V2A
Connector S8	Connector S12
IP 67	IP 67
Embeddable	Embeddable
5000 Hz	5000 Hz
10 ... 65 VDC	10 ... 65 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 100 mA	≤ 100 mA
DW-DS-605-M8-001	**DW-DS-605-M8**
DW-DS-606-M8-001	DW-DS-606-M8

2-WIRE

INDUCTIVE

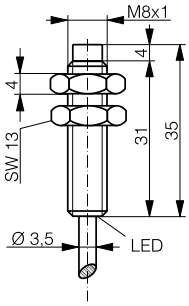
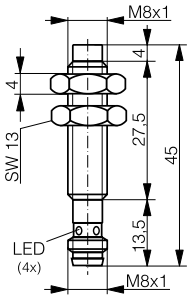
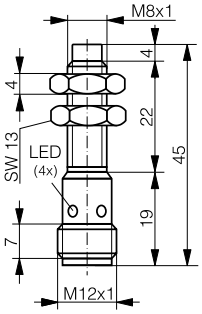
FAMILY	CLASSICS	CLASSICS
HOUSING SIZE MM	M8	M8
OPERATING DISTANCE MM	2	2





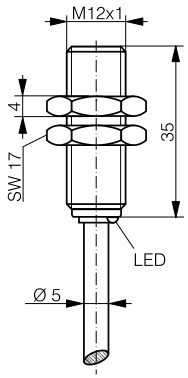
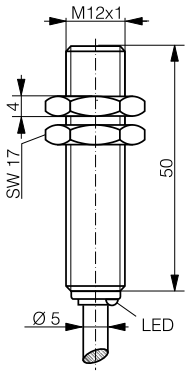
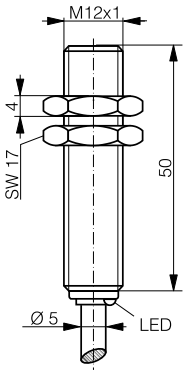
DATA		
Housing material	Stainless steel V2A	Stainless steel V2A
Connection	PVC cable	Connector S8
Degree of protection	IP 67	IP 67
Mounting	Embeddable	Embeddable
Max. switching frequency	5000 Hz	5000 Hz
Supply voltage range	10 ... 65 VDC	10 ... 65 VDC
Ambient temperature range	-25 ... +70°C / -13 … +158°F	-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

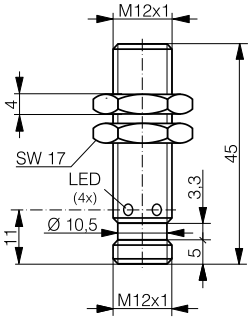
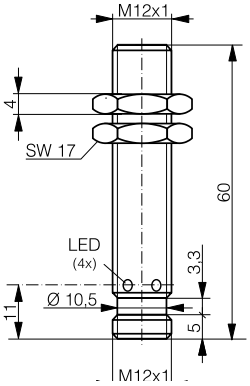
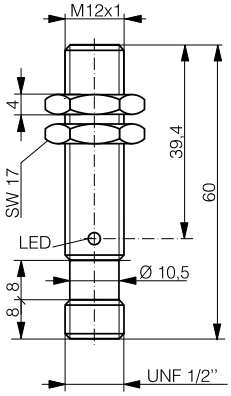
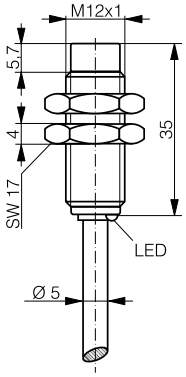
CLASSICS	CLASSICS	CLASSICS
M8	M8	M8
2.5	2.5	2.5
		
		
Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
PVC cable	Connector S8	Connector S12
IP 67	IP 67	IP 67
Non-embeddable	Non-embeddable	Non-embeddable
5000 Hz	5000 Hz	5000 Hz
10 ... 65 VDC	10 ... 65 VDC	10 ... 65 VDC
-25 ... +70°C / -13 ... +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

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			

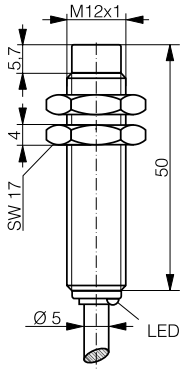
2-WIRE

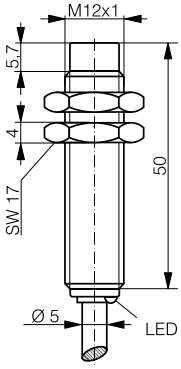
CLASSICS	CLASSICS	CLASSICS	CLASSICS
M12	M12	M12	M12
2	2	2	4
			
			
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connector S12	Connector S12	Connector 1/2”	PVC cable
IP 67	IP 67	IP 67	IP 67
Embeddable	Embeddable	Embeddable	Non-embeddable
3000 Hz	3000 Hz	25 Hz (AC) / 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	

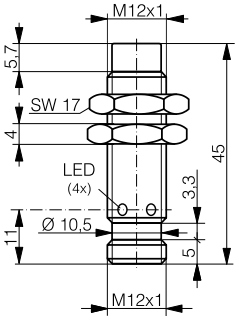
2-WIRE

INDUCTIVE

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



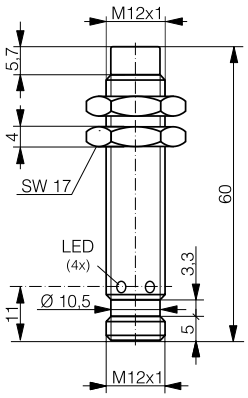


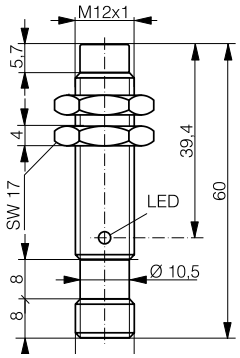


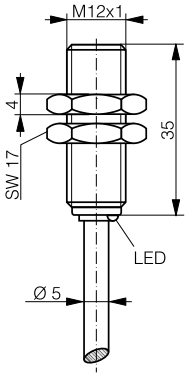
DATA			
Housing material	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connection	PVC cable	PVC cable	Connector S12
Degree of protection	IP 67	IP 67	IP 67
Mounting	Non-embeddable	Non-embeddable	Non-embeddable
Max. switching frequency	2500 Hz	25 Hz (AC) / 2000 Hz (DC)	2500 Hz
Supply voltage 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			

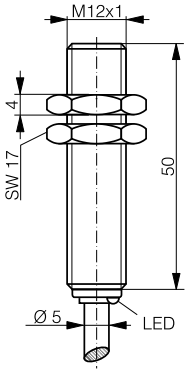
2-WIRE

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







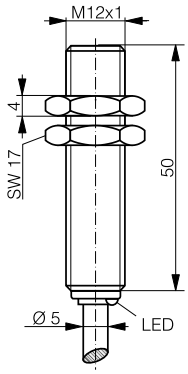


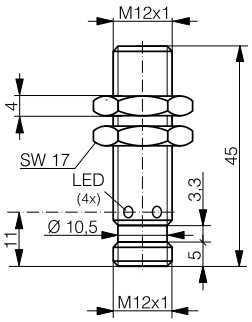
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connector S12	Connector 1/2”	PVC cable	PVC cable
IP 67	IP 67	IP 67	IP 67
Non-embeddable	Non-embeddable	Embeddable	Embeddable
2000 Hz	25 Hz (AC) / 2000 Hz (DC)	2000 Hz	2000 Hz
10 ... 65 VDC	20 ... 265 VAC / 10 ... 320 VDC	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		

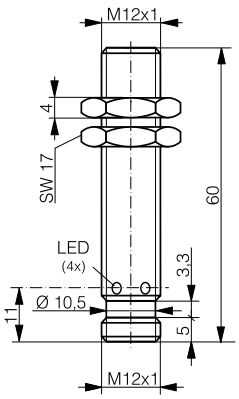
2-WIRE

INDUCTIVE

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

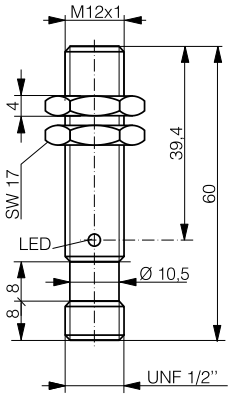
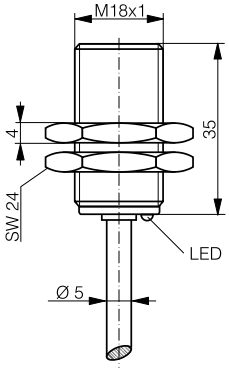
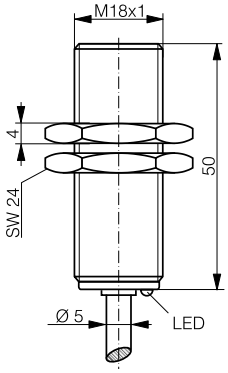
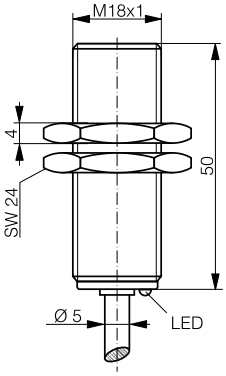






DATA			
Housing material	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connection	PVC cable	Connector S12	Connector S12
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	25 Hz (AC) / 2000 Hz (DC)	2000 Hz	2000 Hz
Supply voltage range	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			

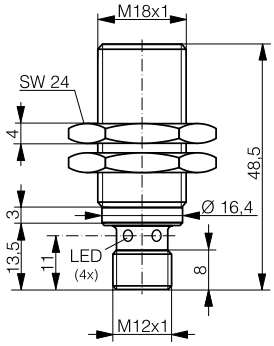
2-WIRE

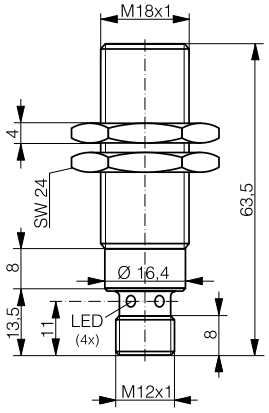
CLASSICS	CLASSICS	CLASSICS	CLASSICS
M12	M18	M18	M18
4	5	5	5
			
			
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connector 1/2”	PVC cable	PVC cable	PVC cable
IP 67	IP 67	IP 67	IP 67
Embeddable	Embeddable	Embeddable	Embeddable
25 Hz (AC) / 2000 Hz (DC)	1500 Hz	1500 Hz	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-DD-605-M18-120	**DW-DD-605-M18**	
	DW-DD-606-M18-120	DW-DD-606-M18	
DW-AS-627-M12-069			**DW-AD-607-M18**
DW-AS-628-M12-069			DW-AD-608-M18

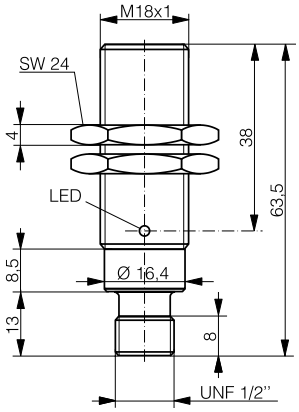
2-WIRE

INDUCTIVE

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

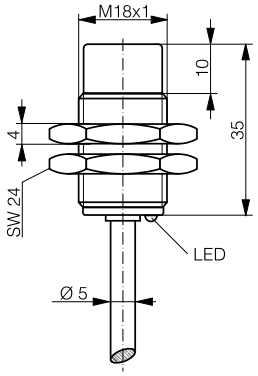
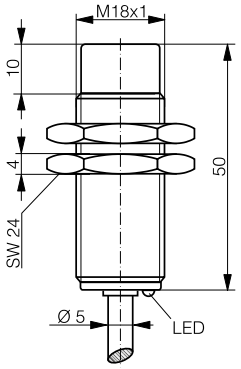
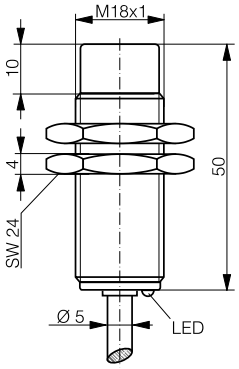
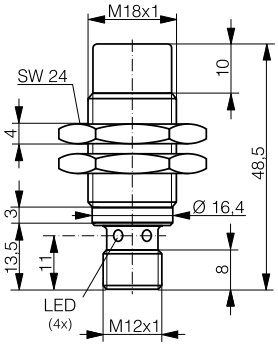






DATA			
Housing material	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connection	Connector S12	Connector S12	Connector 1/2"
Degree of protection	IP 67	IP 67	IP 67
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	1500 Hz	1500 Hz	25 Hz (AC) / 1500 Hz (DC)
Supply voltage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

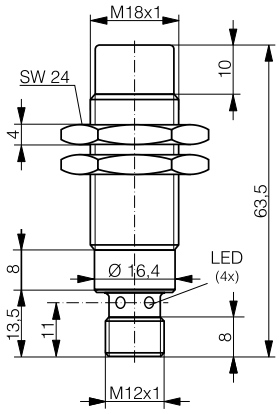
2-WIRE

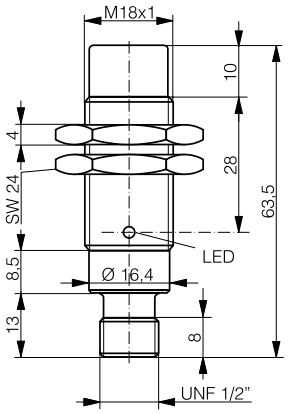
CLASSICS	CLASSICS	CLASSICS	CLASSICS
M18	M18	M18	M18
8	8	8	8
			
			
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
PVC cable	PVC cable	PVC cable	Connector S12
IP 67	IP 67	IP 67	IP 67
Non-embeddable	Non-embeddable	Non-embeddable	Non-embeddable
1200 Hz	1200 Hz	25 Hz (AC) / 1200 Hz (DC)	1200 Hz
10 ... 65 VDC	10 ... 65 VDC	20 ... 265 VAC / 10 ... 320 VDC	10 ... 65 VDC
-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
≤ 100 mA	≤ 100 mA	≤ 200 mA	≤ 100 mA
DW-DD-615-M18-120	**DW-DD-615-M18**		**DW-DS-615-M18-120**
DW-DD-616-M18-120	DW-DD-616-M18		DW-DS-616-M18-120
		DW-AD-617-M18	
		DW-AD-618-M18	

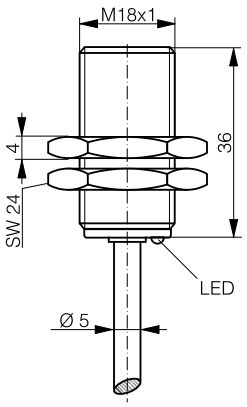
2-WIRE

INDUCTIVE

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

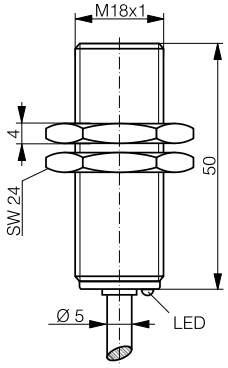
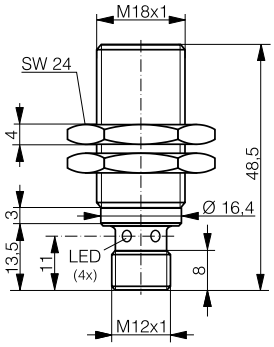
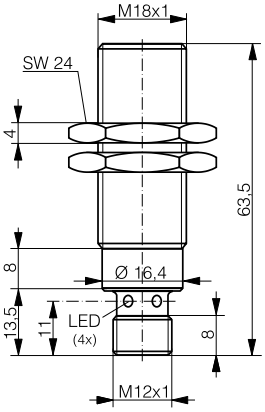






DATA			
Housing material	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connection	Connector S12	Connector 1/2”	PVC cable
Degree of protection	IP 67	IP 67	IP 67
Mounting	Non-embeddable	Non-embeddable	Quasi-embeddable
Max. switching frequency	1200 Hz	25 Hz (AC) / 1200 Hz (DC)	1000 Hz
Supply 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			

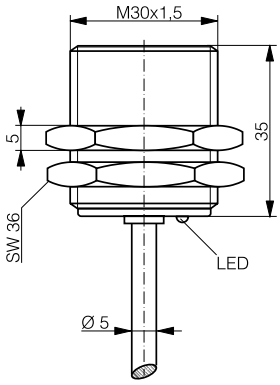
2-WIRE

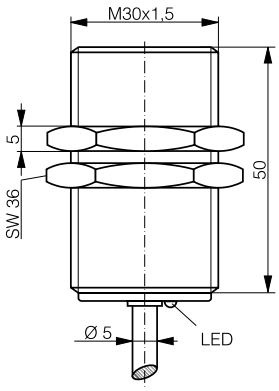
CLASSICS	CLASSICS	CLASSICS
M18	M18	M18
8	8	8
		
		
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
PVC cable	Connector S12	Connector S12
IP 67	IP 67	IP 67
Quasi-embeddable	Quasi-embeddable	Quasi-embeddable
1000 Hz	1000 Hz	1000 Hz
10 ... 65 VDC	10 ... 65 VDC	10 ... 65 VDC
-25 ... +70°C / -13 ... +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

2-WIRE

INDUCTIVE

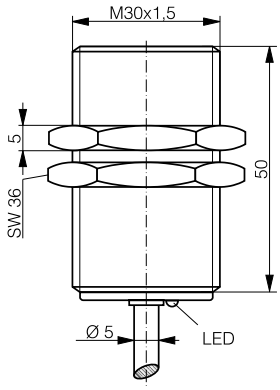
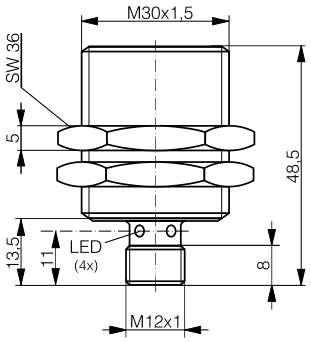
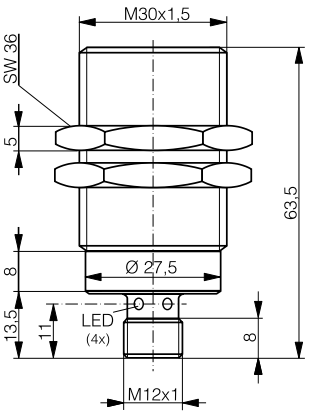
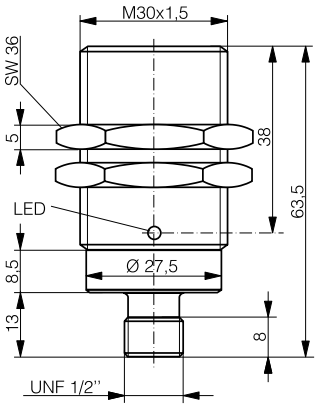
FAMILY	CLASSICS	CLASSICS
HOUSING SIZE MM	M30	M30
OPERATING DISTANCE MM	10	10





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		

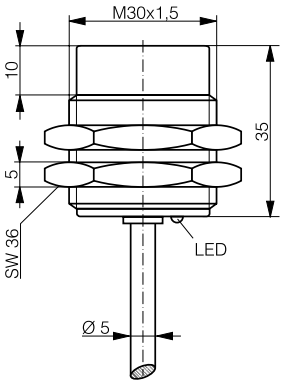
2-WIRE

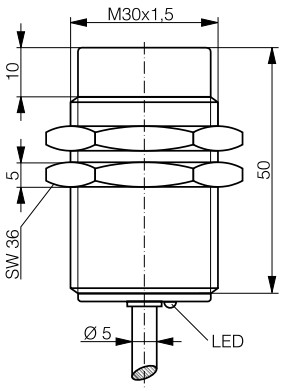
CLASSICS	CLASSICS	CLASSICS	CLASSICS
M30	M30	M30	M30
10	10	10	10
			
			
Chrome-plated brass	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
PVC cable	Connector S12	Connector S12	Connector 1/2”
IP 67	IP 67	IP 67	IP 67
Embeddable	Embeddable	Embeddable	Embeddable
25 Hz (AC) / 600 Hz (DC)	600 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-DS-605-M30-120	**DW-DS-605-M30-002**	
	DW-DS-606-M30-120	DW-DS-606-M30-002	
DW-AD-607-M30			**DW-AS-607-M30-069**
DW-AD-608-M30			DW-AS-608-M30-069

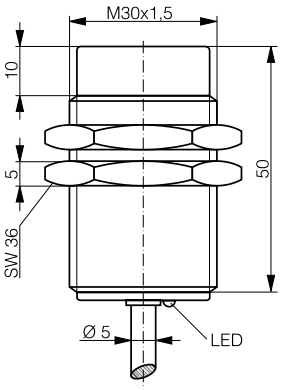
2-WIRE

INDUCTIVE

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

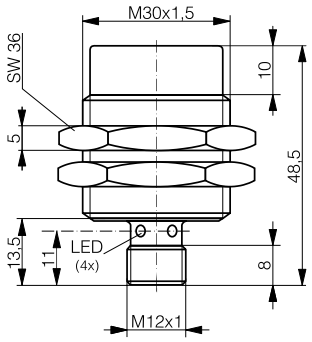
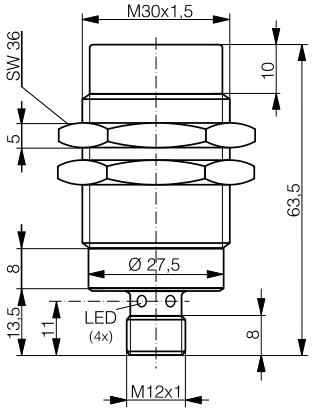
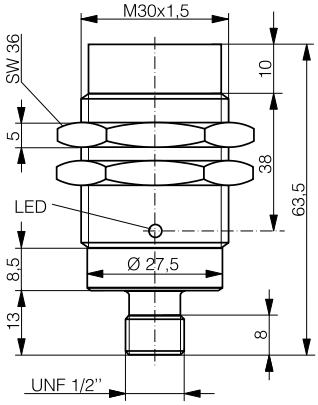






DATA			
Housing material	Chrome-plated brass	Chrome-plated brass	Chrome-plated brass
Connection	PVC cable	PVC cable	PVC cable
Degree of protection	IP 67	IP 67	IP 67
Mounting	Non-embeddable	Non-embeddable	Non-embeddable
Max. switching frequency	500 Hz	500 Hz	25 Hz (AC) / 500 Hz (DC)
Supply voltage range	10 ... 65 VDC	10 ... 65 VDC	20 ... 265 VAC / 10 ... 320 VDC
Ambient temperature range	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F	-25 ... +70°C / -13 ... +158°F
Output current	≤ 100 mA	≤ 100 mA	≤ 200 mA
DC 2-wire NO	**DW-DD-615-M30-120**	**DW-DD-615-M30**	
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-DS-616-M30-120	DW-DS-616-M30-002	
		DW-AS-617-M30-069
		DW-AS-618-M30-069

PRESSURE RESISTANT UP TO 200 BAR (2901 PSI)

EXTRA PRESSURE

INDUCTIVE SENSORS

KEY ADVANTAGES

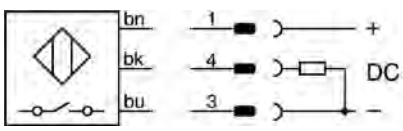
- ✓ Pressure resistant up to 200 bar (2901 psi)
- ✓ High quality ASIC sensors with IO-Link interface
- ✓ Mechanically and chemically rugged
- ✓ Impervious: IP 68
- ✓ Gas-tight sensing face
- ✓ Miniature devices

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

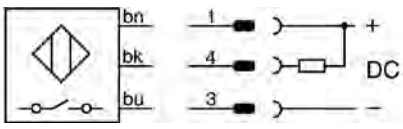
INDUCTIVE

WIRING DIAGRAMS

PNP NO



NPN NO

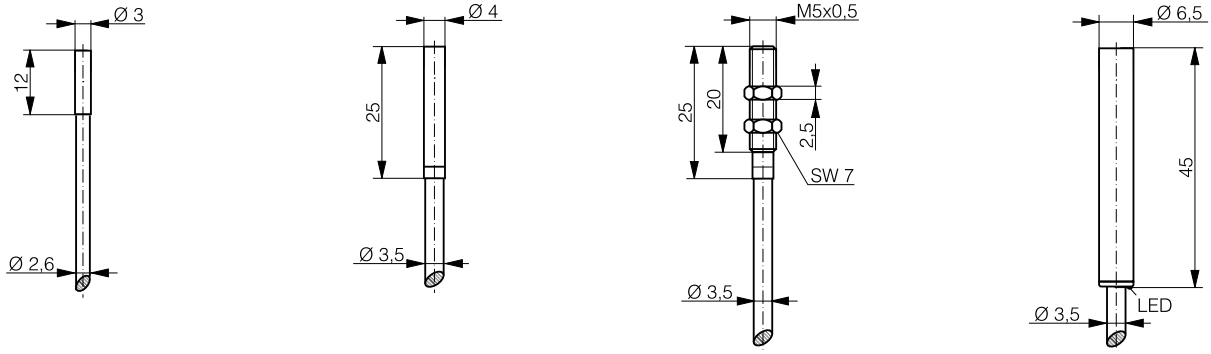


DATA

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

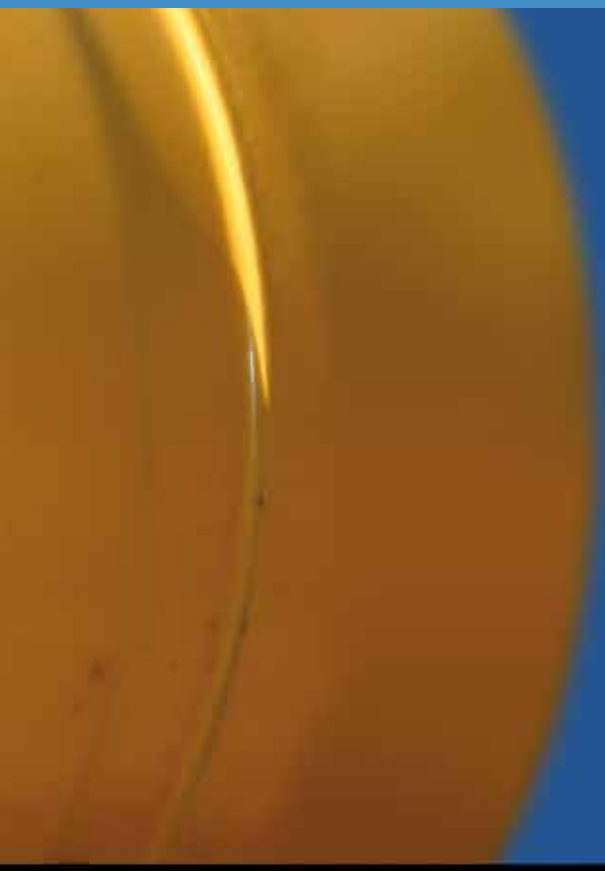
CLASSICS	CLASSICS	CLASSICS	EXTRA DISTANCE
Ø 3	Ø 4	M5	Ø 6.5
0.8	0.6	0.6	2.5



* 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

PRESSURE RESISTANT UP TO 500 BAR (7255 PSI)



HIGH PRESSURE

INDUCTIVE SENSORS

KEY ADVANTAGES

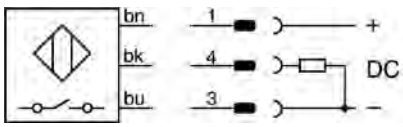
- ✓ Highest operating (500 bar / 7255 psi) and peak pressure (1000 bar / 14510 psi) on the market
- ✓ Resistant to pressure cycles - 50 times longer lifetime under pressure than the market standard
- ✓ Gas-tight sensing face
- ✓ Large temperature range -25°C ... +100°C (-13°F ... +212°F)
- ✓ High quality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

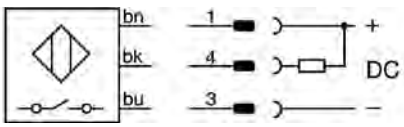
INDUCTIVE

WIRING DIAGRAMS

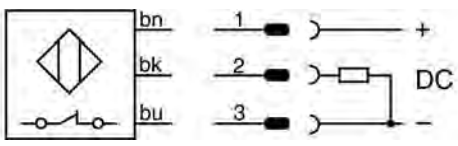
PNP NO



NPN NO



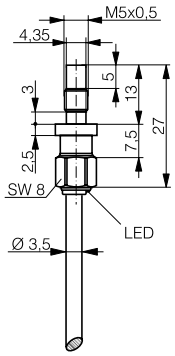
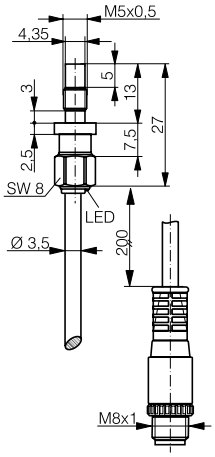
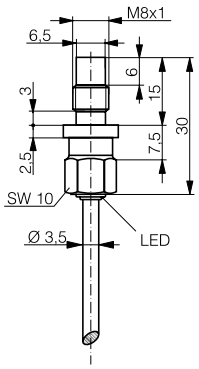
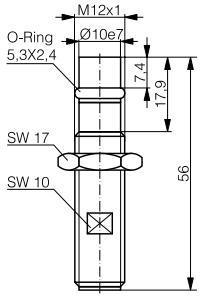
PNP NC



DATA

Sensing face material	
Operating pressure	
Peak pressure	
Housing material	
Connection	
Degree of protection	
Mounting	
Max. switching frequency	
Supply voltage range	
Ambient temperature range	
Output current	
PNP NO	
NPN NO	
PNP NO (S_n = 1.5 mm)	
PNP NC (S_n = 1.5 mm)	
PNP NO (S_n = 2.5 mm)	
Other types available	

HIGH PRESSURE

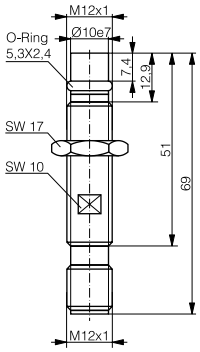
EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE	EXTRA DISTANCE
M5 (P5)	M5 (P5)	M8 (P8)	M12 (P12)
1	1	1.5	1.5 (2.5)
			
			
* IO-Link	* IO-Link	* IO-Link	* IO-Link
Ceramic ZrO_2	Ceramic ZrO_2	Ceramic ZrO_2	Ceramic ZrO_2
500 bar	500 bar	500 bar	500 bar
1000 bar	1000 bar	1000 bar	1000 bar
Stainless steel V4A / 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

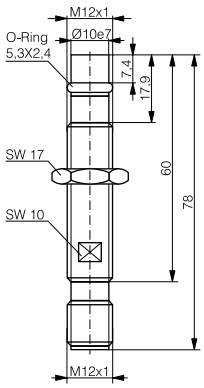
* IO-Link available from Q4/18

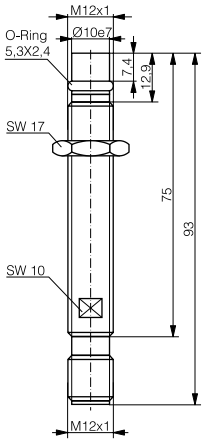
HIGH PRESSURE

INDUCTIVE

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)



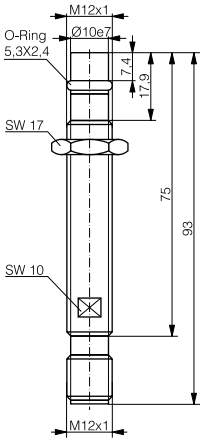
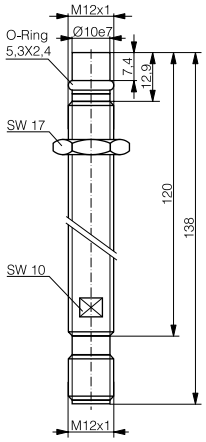
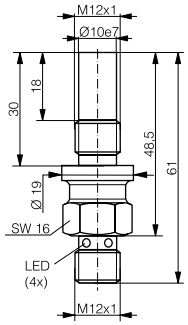
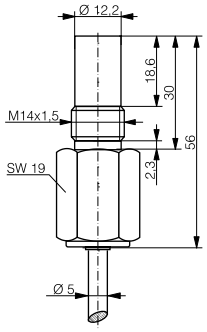




* IO-Link available from Q4/18

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

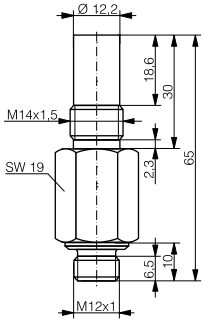
HIGH PRESSURE

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

HIGH PRESSURE

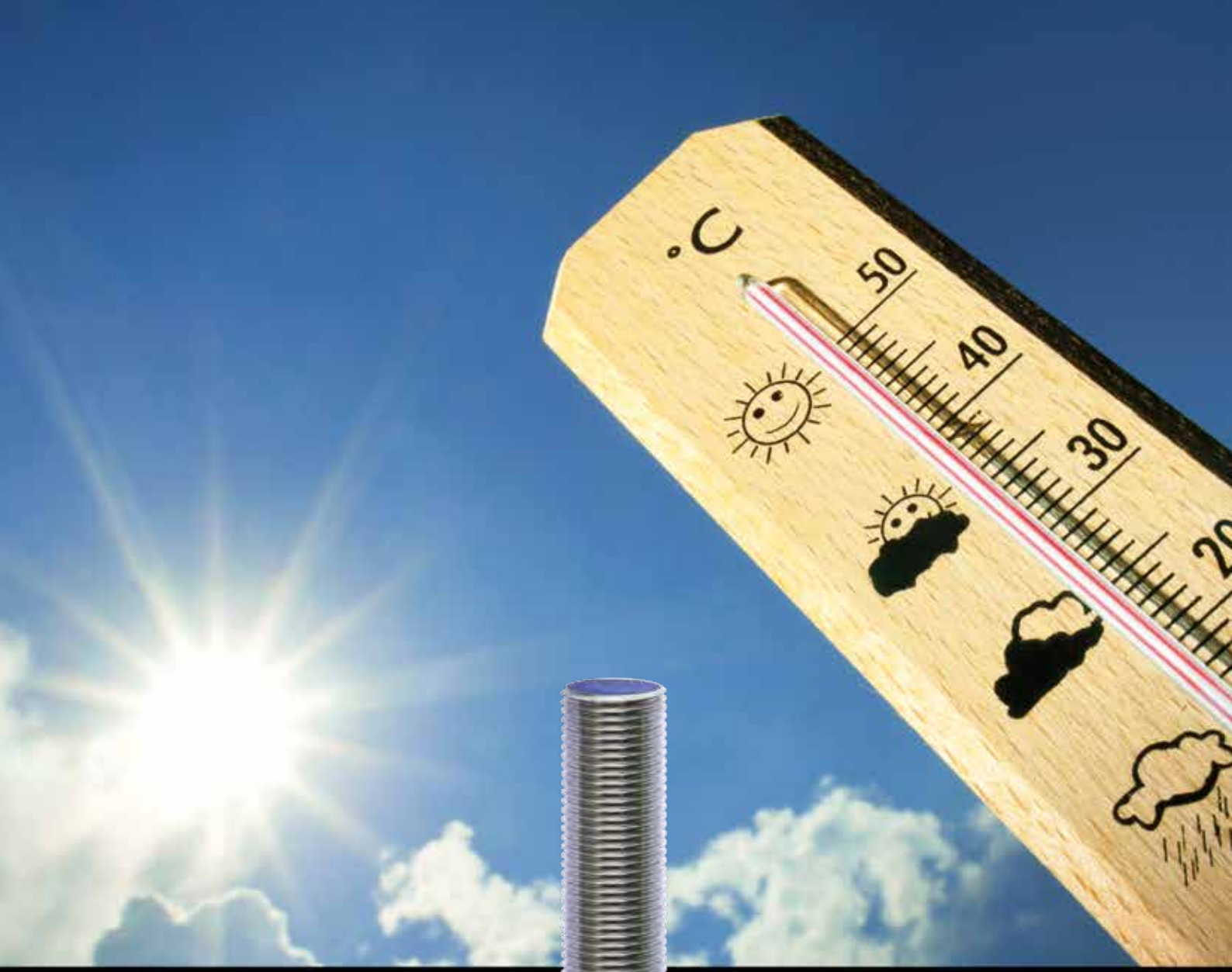
INDUCTIVE

FAMILY	EXTRA DISTANCE	
HOUSING SIZE	M14 (P20)	
OPERATING DISTANCE MM	3	



* 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	



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

EXTRA TEMPERATURE

INDUCTIVE SENSORS

KEY ADVANTAGES

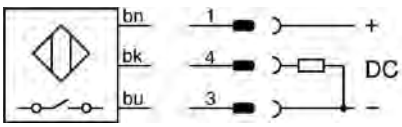
- ✓ Temperature resistant up to +120°C (+248°F)
- ✓ Excellent long term reliability
- ✓ Outstanding accuracy
- ✓ High quality ASIC sensors with IO-Link interface

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

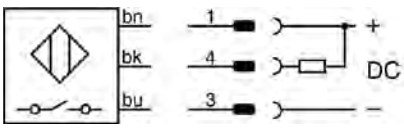
INDUCTIVE

WIRING DIAGRAMS

PNP NO



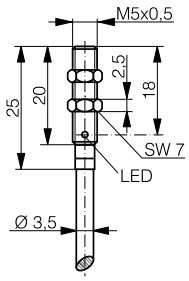
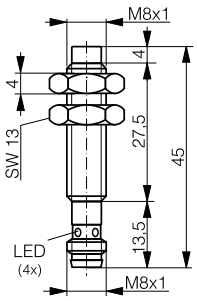
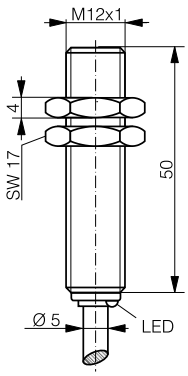
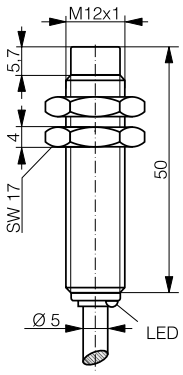
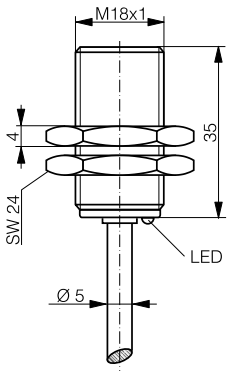
NPN NO



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
				
				
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

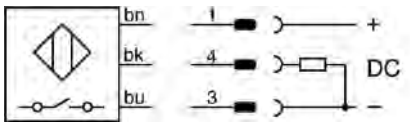
PART REFERENCE	HOUSING SIZE	OPERATING DISTANCE MM
DW-HD-623-M8-100	M8	2
DW-HD-621-M8-100	M8	2
DW-HD-603-M12-200	M12	3
DW-HD-601-M12-200	M12	3
DW-HD-603-M18-310	M18	5
DW-HD-601-M18-310	M18	5
DW-HD-603-M30-310	M30	10
DW-HD-601-M30-310	M30	10
DW-HD-603-M50-411	M50	20
DW-HD-601-M50-411	M50	20
DW-HD-613-M50-411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

FAMILY
HOUSING SIZE
OPERATING DISTANCE MM

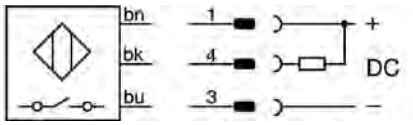
INDUCTIVE

WIRING DIAGRAMS

PNP NO

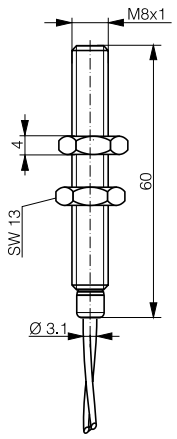
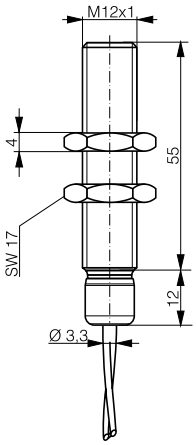
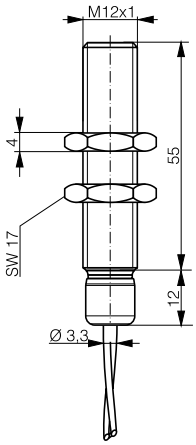
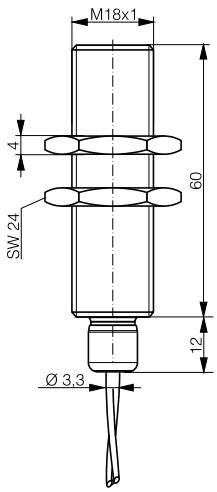


NPN NO



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

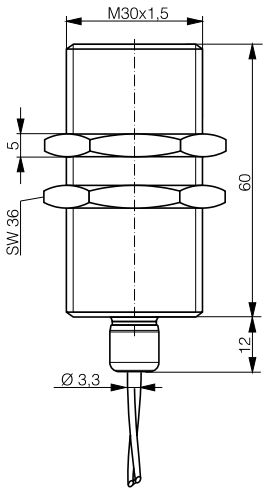
HIGH TEMPERATURE

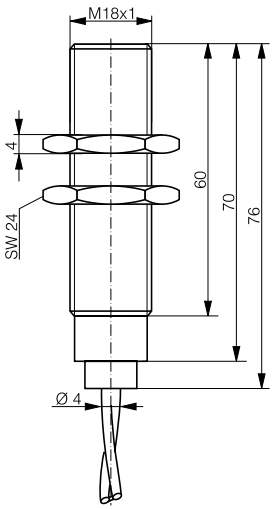
CLASSICS	CLASSICS	CLASSICS	CLASSICS
M8	M12	M12	M18
2	3	4	5
			
			
100% SILICONE FREE	100% SILICONE FREE	100% SILICONE FREE	100% SILICONE FREE
Built-in	Built-in	Built-in	Built-in
Ferritic stainless steel	Ferritic stainless steel	Ferritic stainless steel	Ferritic stainless steel
FEP cable 2 m	FEP cable 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**

HIGH TEMPERATURE

INDUCTIVE

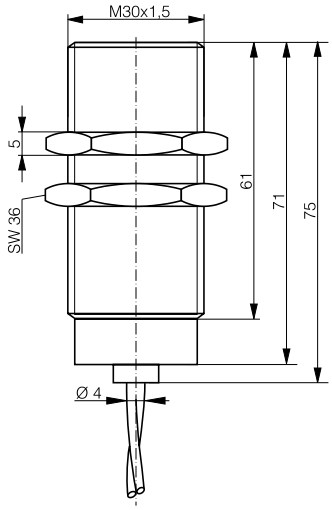
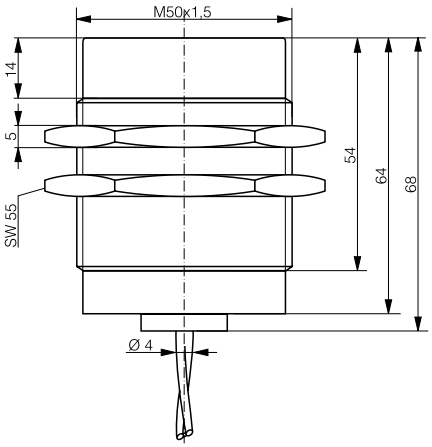
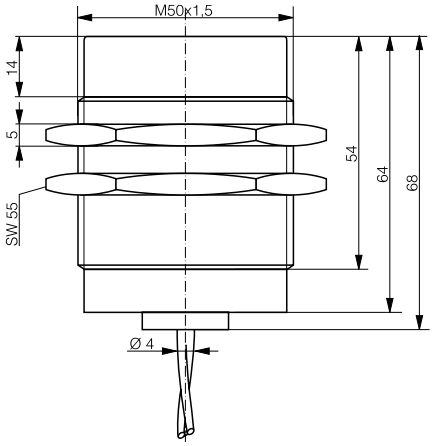
FAMILY	CLASSICS	CLASSICS
HOUSING SIZE	M30	M18
OPERATING DISTANCE MM	10	5





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

DURABLE AND RELIABLE IN WELDING CELLS

WELD-IMMUNE

INDUCTIVE SENSORS

KEY ADVANTAGES

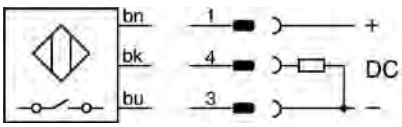
- ✓ Resistant to electromagnetic fields of up to 40 millitesla
- ✓ Extremely robust
- ✓ Easy to clean - even using harsh methods
- ✓ No false switching caused by metal dust or chips
- ✓ Factor 1 on steel and aluminum
- ✓ No extra protection needed
- ✓ Long operating distances

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

INDUCTIVE

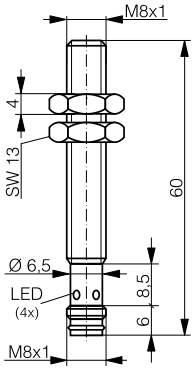
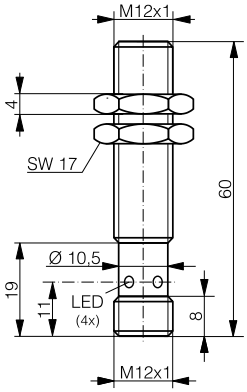
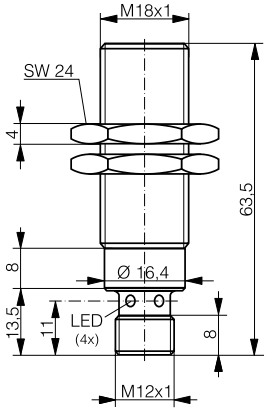
WIRING DIAGRAM

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**

FOR THE HARSHEST MACHINING ENVIRONMENTS

CHIP-IMMUNE

INDUCTIVE SENSORS

KEY ADVANTAGES

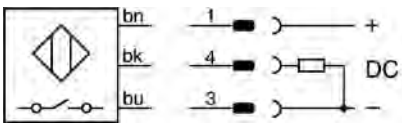
- ✓ Detection not influenced by chips of steel, stainless steel, aluminum, brass, copper or titanium
- ✓ Detection of targets made of the above metals
- ✓ Robust, one-piece stainless-steel housing, protection rating IP 68 and IP 69K
- ✓ Temperature range -25 to +85°C (-13 to +185°F)
- ✓ Size M12, M18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

INDUCTIVE

WIRING DIAGRAM

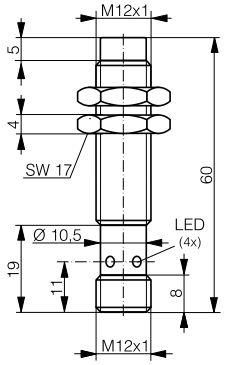
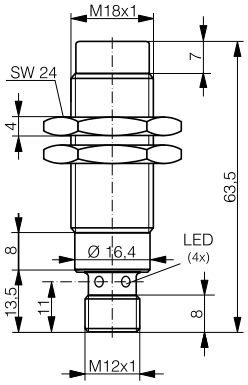
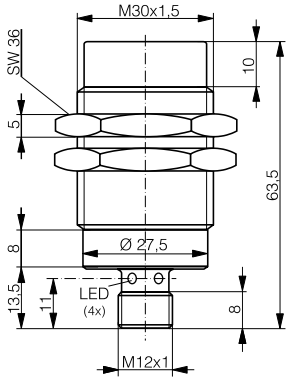
PNP NO



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

DOUBLE-SHEET

INDUCTIVE SENSORS

KEY ADVANTAGES

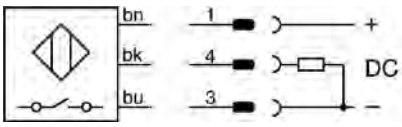
- ✓ Double-sheet detection (steel and aluminum) with sensitivity of 0.8 - 1.2 mm per sheet
- ✓ Full Inox: extremely robust one-piece stainless-steel housing
- ✓ Corrosion resistant
- ✓ IP 68 and IP 69K
- ✓ Pressure resistant up to 80 bar

RANGE OVERVIEW	Housing size	Full Inox
DOUBLE-SHEET	M30	p. 161

INDUCTIVE

WIRING DIAGRAM

PNP NO

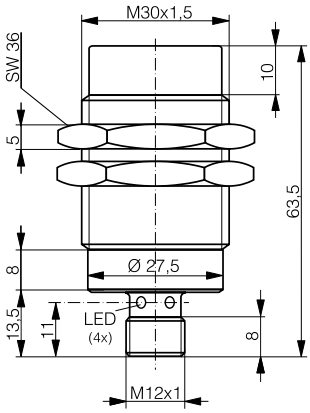


DATA

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		



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

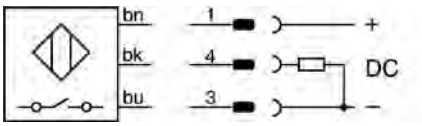
- ✓ GL approved, class DNV-GL-CG-0339
- ✓ Extremely rugged sensors, fit for Industry 4.0
- ✓ Special EMC protection
- ✓ Resistant to corrosion and salt water
- ✓ Impervious, enclosure rating IP 68 or IP 69K
- ✓ Temperature range -40 ... +85°C (-40 ... +185°F)
- ✓ Full Inox types: one-piece stainless-steel 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

INDUCTIVE

WIRING DIAGRAMS

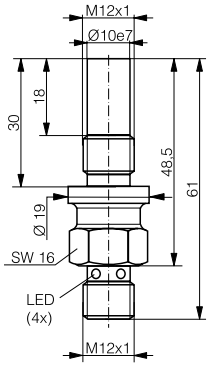
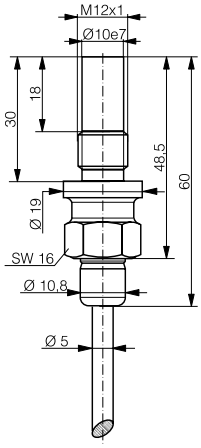
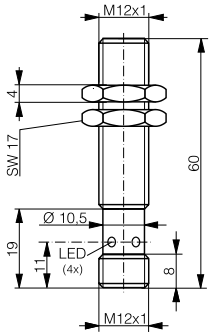
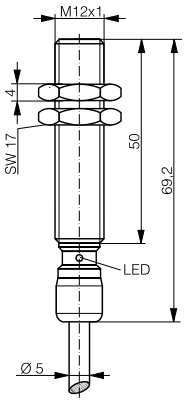
PNP NO



DATA

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

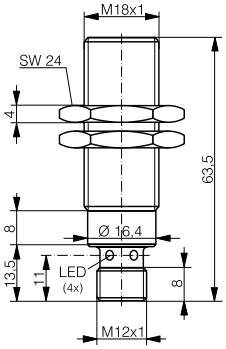
MARITIME

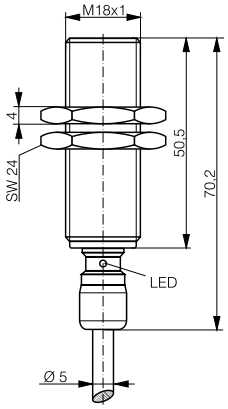
CLASSICS	CLASSICS	CLASSICS	CLASSICS
M12 (P12)	M12 (P12)	M12	M12
1.5	1.5	6	6
			
			
IO-Link	IO-Link	IO-Link	IO-Link
Stainless steel V4A/AISI 316L	Stainless steel V4A/AISI 316L	Stainless steel V4A/AISI 316L	Stainless steel V4A/AISI 316L
Connector S12	PUR cable	Connector S12	PUR cable
IP 68 / IP 69K	IP 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**

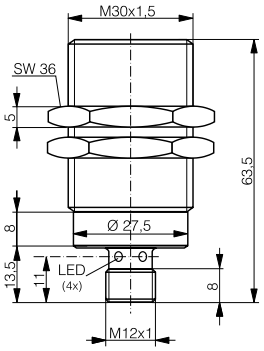
MARITIME

INDUCTIVE

FAMILY	CLASSICS	CLASSICS	CLASSICS
HOUSING SIZE MM	M18	M18	M30
OPERATING DISTANCE MM	10	10	20



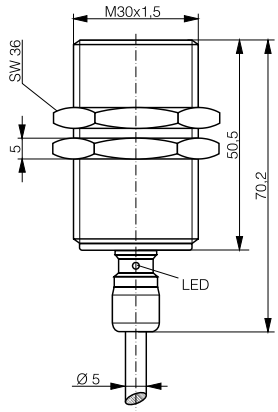


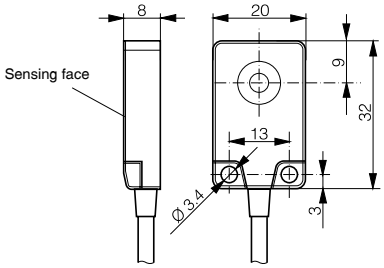


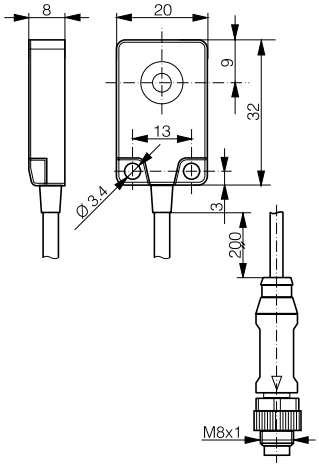
DATA	IO-Link	IO-Link	IO-Link
Housing material	Stainless steel V4A/AISI 316L	Stainless steel V4A/AISI 316L	Stainless steel V4A/AISI 316L
Connection	Connector S12	PUR cable	Connector S12
Degree of protection	IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K
Mounting	Embeddable	Embeddable	Embeddable
Max. switching 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**

ECOLAB APPROVED FOR HARSHEST CLEANING PROCESSES

WASHDOWN

INDUCTIVE SENSORS

KEY ADVANTAGES

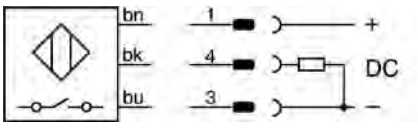
- ✓ Corrosion resistant
- ✓ Food safe
- ✓ IP 68 / IP 69K protection
- ✓ IO-Link interface
- ✓ Extremely rugged Full Inox types:
  one-piece stainless-steel housing, factor 1 on steel and aluminum, Ecolab approved

RANGE OVERVIEW	Housing size	Classics	Full Inox
WASHDOWN	M12	p. 171	p. 171-172
	M18		p. 172-173
	M30		p. 173-174

INDUCTIVE

WIRING DIAGRAM

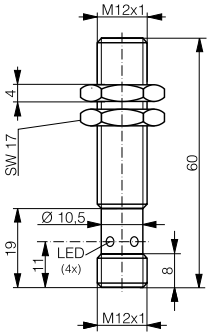
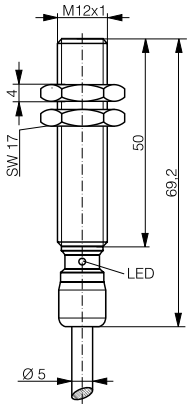
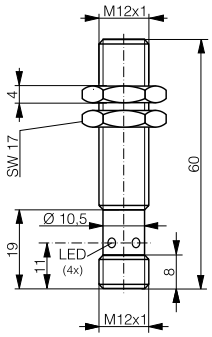
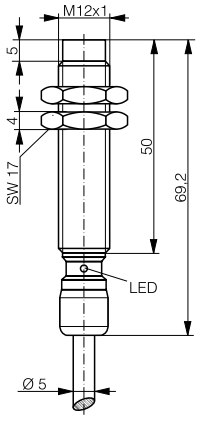
PNP NO



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

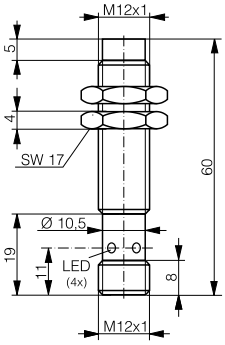
WASHDOWN

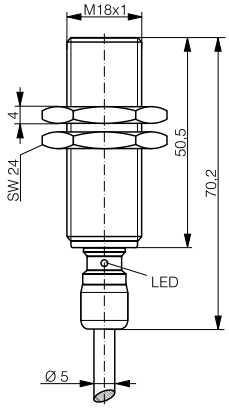
CLASSICS	FULL INOX	FULL INOX	FULL INOX
M12	M12	M12	M12
2	6	6	10
			
			
IO-Link	IO-Link	IO-Link	IO-Link
-	80 bar	80 bar	80 bar
PPS/Stainless steel V4A	Stainless steel V4A/AISI 316L	Stainless steel V4A/AISI 316L	Stainless steel V4A/AISI 316L
Connector S12	TPE-S cable	Connector S12	TPE-S cable
IP 68 / 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

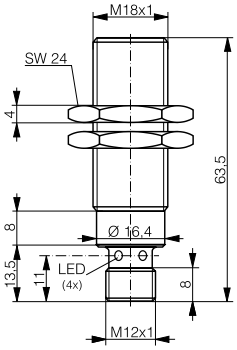
WASHDOWN

INDUCTIVE

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

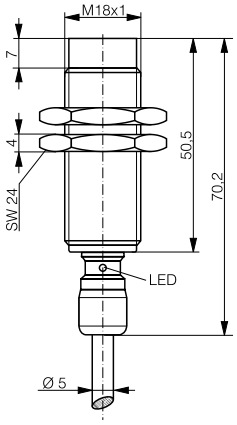
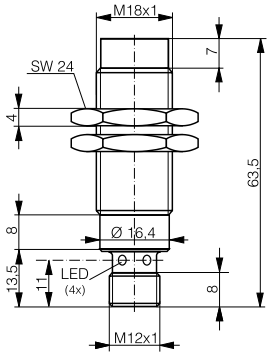
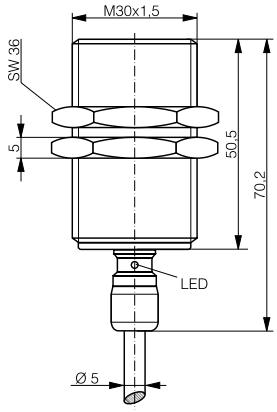






DATA	IO-Link	IO-Link	IO-Link
Operating pressure	80 bar	60 bar	60 bar
Housing material	Stainless steel V4A/AISI 316L	Stainless steel V4A/AISI 316L	Stainless steel V4A/AISI 316L
Connection	Connector S12	TPE-S cable	Connector S12
Degree of protection	IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K
Mounting	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

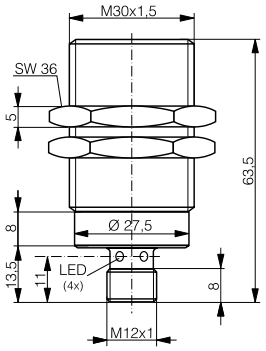
WASHDOWN

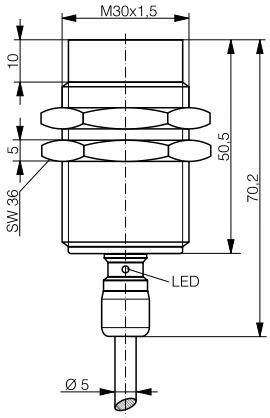
FULL INOX	FULL INOX	FULL INOX
M18	M18	M30
20	20	20
		
		
IO-Link	IO-Link	IO-Link
60 bar	60 bar	40 bar
Stainless steel V4A/AISI 316L	Stainless steel V4A/AISI 316L	Stainless steel V4A/AISI 316L
TPE-S cable	Connector S12	TPE-S cable
IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K
Non-embeddable	Non-embeddable	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

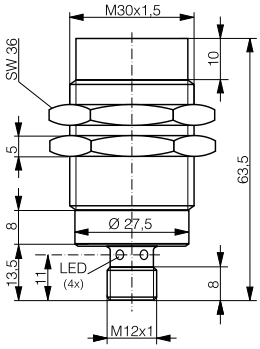
WASHDOWN

INDUCTIVE

FAMILY	FULL INOX	FULL INOX	FULL INOX
HOUSING SIZE	M30	M30	M30
OPERATING DISTANCE MM	20	40	40



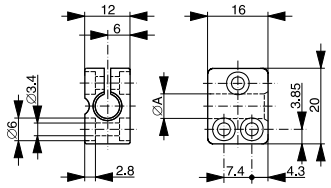




DATA	IO-Link	IO-Link	IO-Link
Operating pressure	40 bar	40 bar	40 bar
Housing material	Stainless steel V4A/AISI 316L	Stainless steel V4A/AISI 316L	Stainless steel V4A/AISI 316L
Connection	Connector S12	TPE-S cable	Connector S12
Degree of protection	IP 68 / IP 69K	IP 68 / IP 69K	IP 68 / IP 69K
Mounting	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

SENSOR MOUNTING CLAMPS

∅3, ∅4, ∅5, ∅6.5, ∅8

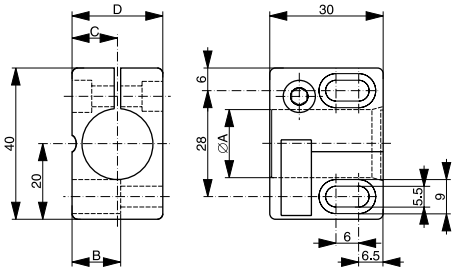


TECHNICAL DATA

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

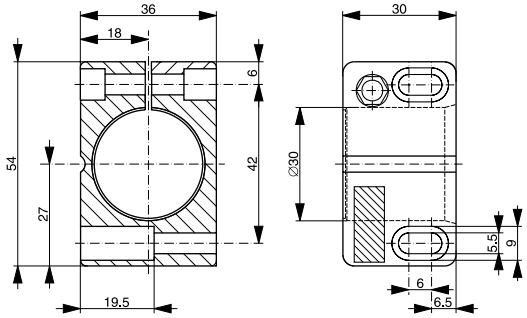


TECHNICAL DATA

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

∅30

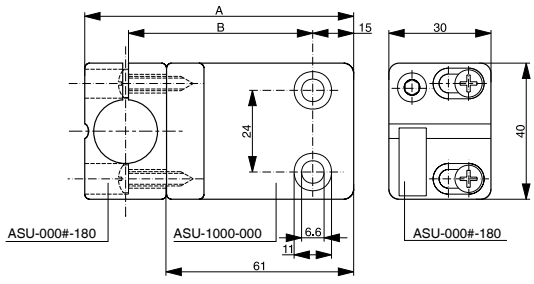


TECHNICAL DATA

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

Material: PA 6 GK black
Screw: DIN 912, M5 x 25 zinc-plated
Nut: DIN 934, M5 zinc-plated

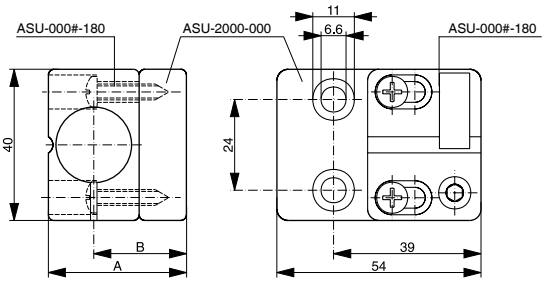
BASES FOR MOUNTING CLAMPS ∅12, ∅18



TECHNICAL DATA

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

Material: PA 6 black
Screws: DIN 7981, ∅ 4.2 zinc-plated



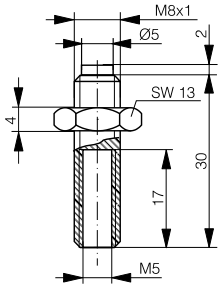
TECHNICAL DATA

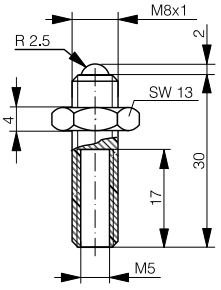
Part reference	Type	A with ∅ 12 mm / ∅ 18 mm	B with ∅ 12 mm / ∅ 18 mm
ASU-2000-000	vertical	30.5 mm / 36.5 mm	21.5 mm / 24.5 mm

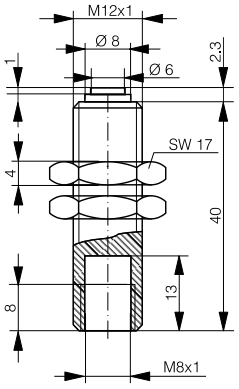
Material: PA 6 black
Screws: DIN 7981, ∅ 4.2 zinc-plated

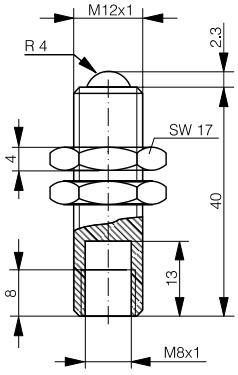
MECHANICAL STOPS

FOR M5 AND M8 INDUCTIVE SENSORS





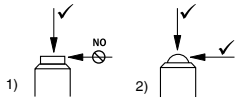




TECHNICAL DATA

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

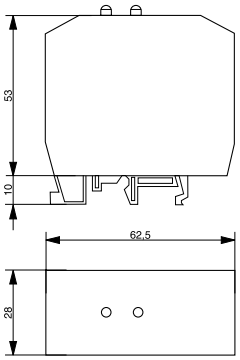
Material: Steel XC 48, black
Max. tightening torque: 30 Nm (M08), 50 Nm (M12)



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):



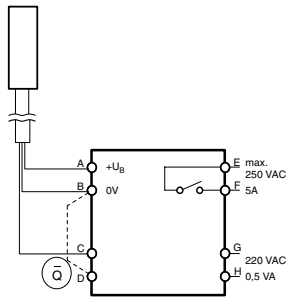
AMPLIFIERS FOR 3-WIRE SENSORS

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:



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 600 mAh (included)
- Battery life longer than 2 hours at 50 mA current supply
- Micro-USB interface to recharge battery with universal mobile phone charger

AMPLIFIERS FOR NAMUR SENSORS

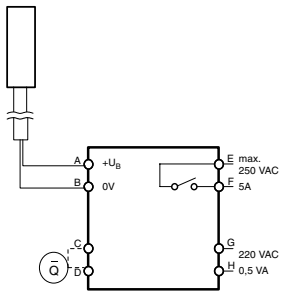
DW-AZ-100-AN

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:



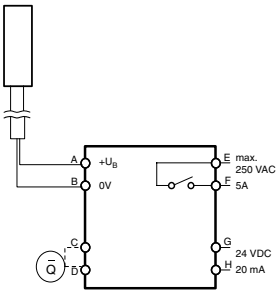
DW-AZ-100-DN

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:



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

Part reference	Chapter/page	Part reference	Chapter/page	Part reference	Chapter/page
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
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* Status April 2018, own assessment

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