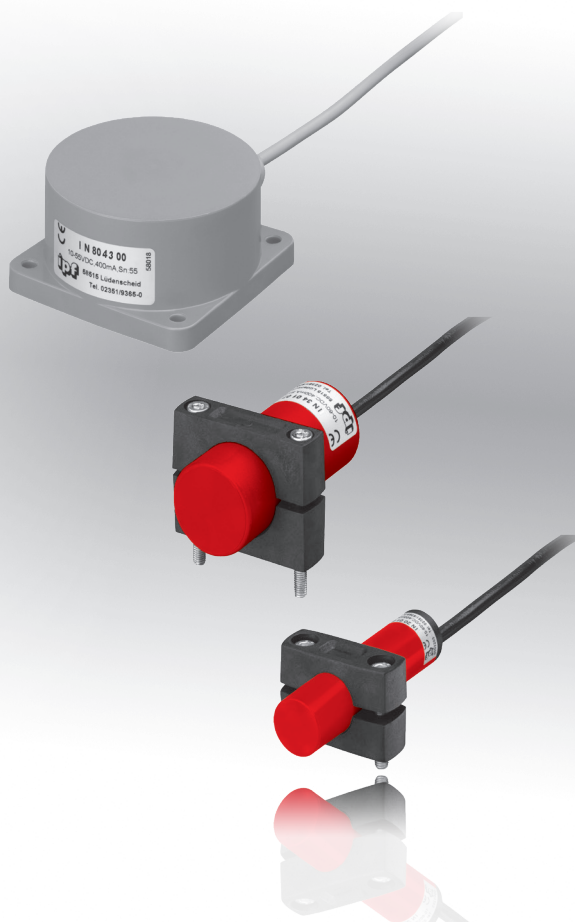


dimensions

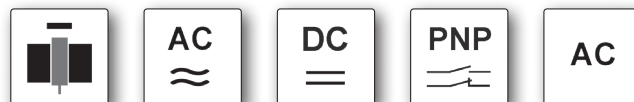
- M12 x 1
- M18 x 1
- Ø 20mm
- M30 x 1.5
- Ø 34mm
- Ø 80mm
- Ø 105mm
- Ø 160mm
- Ø 200mm

non-flush switching distance 4 to 140mm

- ✓ plastic housing
- ✓ LED display
- ✓ integrated amplifier
- ✓ high switching frequency and switching distances
- ✓ connection via cable and M12-connector



**switching distance up to 140mm
adjustable sensitivity**



description

The inductive proximity switches described here feature a robust plastic housing. Because these are injection molded parts, the devices are very tightly sealed near the active surfaces. Moreover, compared to the typically used brass housings, they offer improved resistance to various chemicals. Devices with diameters from 80mm are equipped with a potentiometer for sensitivity adjustment. The size of the active surface ensures that very large switching distances can be achieved. To realize the specified distances, attention must be paid to the dimensions of the object. According to the standard, this is a square steel plate (ST37) with a thickness of 1 mm; the edge length must correspond to the diameter of the active surface of the used sensor. If the object is smaller or does not have a flat surface, the switching distance is reduced.

Correction factors are listed in the data sheet for the detection of other metals.

In order to assess the approximate switching distance to an object of the specified materials, the value of the nominal switching distance must be multiplied by the corresponding

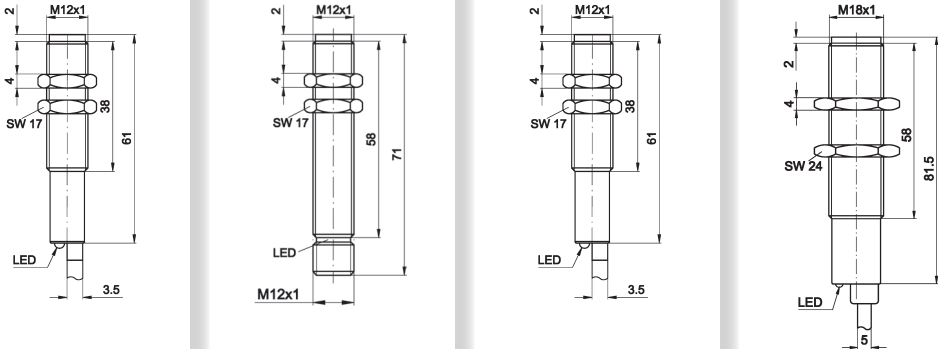
correction factor.

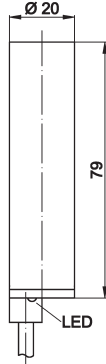
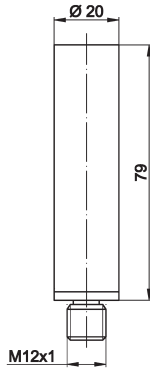
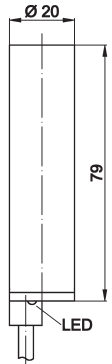
The DC versions of the large proximity switches (> Ø 80mm) are now equipped with an exclusive-OR switching output as well as an M12 plug connection.

The application fields of these devices include areas where, e.g., sheet metal parts are to be detected with relatively large mechanical tolerances. The range of applications extends from machine/systems engineering, automotive industry, conveyor technology and packaging industry, technology for the printing/paper industries, chemical engineering and process engineering (as well as many other industries).

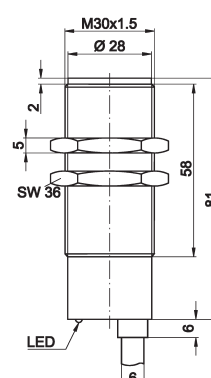
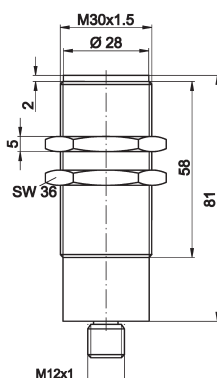
application examples

- ▶ integration in machine parts in the automation technology
- ▶ checking the presence of metal parts with various dimensions
- ▶ detecting object heights, e.g. metal parts on conveyor belts
- ▶ detection of objects through the walls of non-metallic containers and tubes

article-no.	IN120107	IN120127	IN124107	IN180107
switching distance	4.0mm	4.0mm	4.0mm	8.0mm
output signal	pnnp,no	pnnp,no	AC,no	pnnp,no
connection	cable	M12-connector	cable	cable
				
TECHNICAL DATA				
switching distance (Sn)	4.0mm	4.0mm	4.0mm	8.0mm
output signal	pnnp, no	pnnp, no	AC, no	pnnp, no
mounting	non-flush	non-flush	non-flush	non-flush
operating voltage	10 ... 30V DC	10 ... 30V DC	76 ... 250V AC	10 ... 60V DC
current consumption (w/o load)	≤ 11mA	≤ 11mA	≤ 2.5mA	≤ 8.0mA
output current (max. load)	200mA	200mA	200mA	200mA
voltage drop (max. load)	1.5V DC	1.5V DC	< 10.0V AC	< 2.5V DC
norm measuring plate	acc. to EN 60947-5-2	acc. to EN 60947-5-2	acc. to EN 60947-5-2	acc. to EN 60947-5-2
hysteresis	approx. 10%	approx. 10%	approx. 10%	approx. 10%
repeat accuracy	≤ 5%	≤ 5%	≤ 5%	≤ 5%
correction factors (St37/Alu/Ms)	1/0.4/0.4	1/0.4/0.4	1/0.4/0.4	1/0.4/0.4
correction factors (stainl. steel/Cu)	0.7/0.3	0.7/0.3	0.7/0.3	0.7/0.3
switching frequency	400Hz	400Hz	25Hz	200Hz
display (signal)	yellow LED	yellow LED	yellow LED	yellow LED
short-circuit protection	+	+	-	+
reverse polarity protection	+	+	+	+
dimensions	M12x1	M12x1	M12x1	M18x1
length (thread/complete)	38mm/61mm	58mm/71mm	38mm/61mm	58mm/81.5mm
housing material	PA 6	PA 6	PA 6	PA 6
operating temperature	-25 ... +70°C	-25 ... +70°C	-25 ... +70°C	-25 ... +70°C
degree of protection (EN 60529)	IP67	IP67	IP67	IP67
connection	2m PVC-cable, 3-wire	M12-connector, 3-pin	2m PVC-cable, 2-wire	2m PVC-cable, 3-wire
connection accessories	-	e.g. VK200025	-	-
mounting accessories (clip)	e.g. AY000049	e.g. AY000049	e.g. AY000049	e.g. AY000051
accessories (universal holder)	AY000115	AY000115	AY000115	AY000117

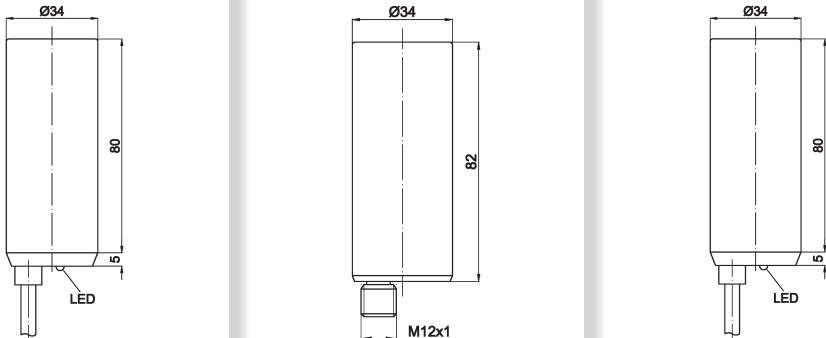
article-no.	IN200107	IN200427	IN204107
switching distance	10mm	10mm	10mm
output signal	pnp, no	pnp, no/nc	AC, no
connection	cable	M12-connector	cable
  			
TECHNICAL DATA			
switching distance (Sn)	10mm	10mm	10mm
output signal	pnp, no	pnp, no/nc	AC, no
mounting	non-flush	non-flush	non-flush
operating voltage	10 ... 60V DC	10 ... 60V DC	20 ... 250V AC
current consumption (w/o load)	≤ 8.0mA	≤ 8.0mA	≤ 2.0mA
output current (max. load)	200mA	200mA	400mA
voltage drop (max. load)	< 2.5V DC	< 2.5V DC	5.0V AC
norm measuring plate	acc. to EN 60947-5-2	acc. to EN 60947-5-2	acc. to EN 60947-5-2
hysteresis	approx. 10%	approx. 10%	approx. 10%
repeat accuracy	≤ 5%	≤ 5%	≤ 5%
correction factors (St37/Alu/Ms)	1/0.4/0.4	1/0.4/0.4	1/0.4/0.4
correction factors (stainl. steel/Cu)	0.7/0.3	0.7/0.3	0.7/0.3
switching frequency	200Hz	200Hz	10Hz
display (signal)	yellow LED	yellow LED	yellow LED
short-circuit protection	+	+	-
reverse polarity protection	+	+	+
dimensions	Ø 20mm	Ø 20mm	Ø 20mm
length (thread/complete)	-/79mm	-/79mm	-/79mm
housing material	PBT	PBT	PBT
operating temperature	-25 ... +70°C	-25 ... +70°C	-25 ... +70°C
degree of protection (EN 60529)	IP67	IP67	IP67
connection	2m PVC-cable, 3-wire	M12-connector, 4-pin	2m PVC-cable, 2-wire
connection accessories	-	e.g. VK000325	-
mounting accessories (clip)	incl. in scope of delivery	incl. in scope of delivery	incl. in scope of delivery
accessories (universal holder)	-	-	-

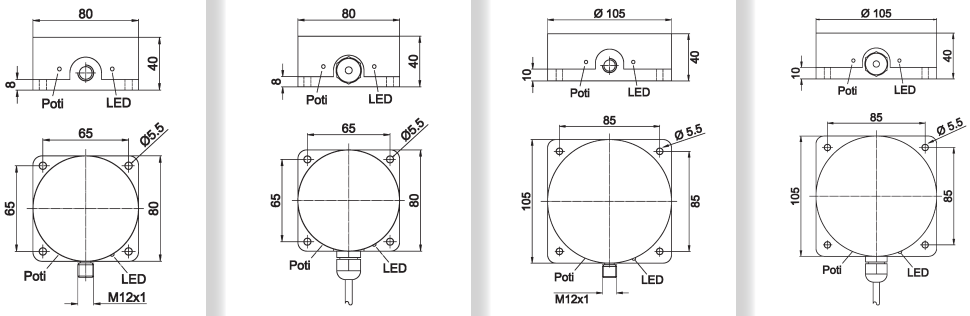
article-no.	IN300127	IN304107
switching distance	15mm	15mm
output signal	npn, no	AC, no
connection	M12-connector	cable

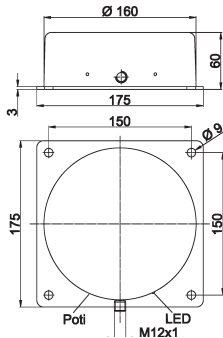
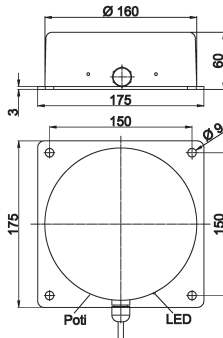


TECHNICAL DATA

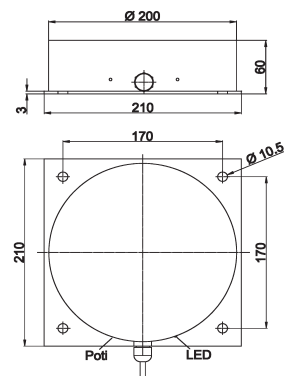
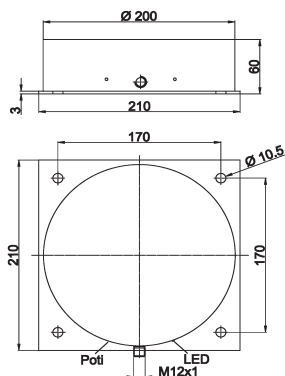
switching distance (Sn)	15mm	15mm
output signal	npn, no	AC, no
mounting	non-flush	non-flush
operating voltage	10 ... 60V DC	20 ... 250V AC
current consumption (w/o load)	≤ 8.0mA	≤ 2.0mA
output current (max. load)	200mA	400mA
voltage drop (max. load)	2.5V DC	< 5.0V AC
norm measuring plate	acc. to EN 60947-5-2	acc. to EN 60947-5-2
hysteresis	approx. 10%	approx. 10%
repeat accuracy	≤ 5%	≤ 5%
correction factors (St37/Alu/Ms)	1/0.4/0.4	1/0.4/0.4
correction factors (stainl. steel/Cu)	0.7/0.3	0.7/0.3
switching frequency	100Hz	10Hz
display (signal)	-	-
short-circuit protection	+	-
reverse polarity protection	+	+
dimensions	M 30x1.5	M 30x1.5
length (thread/complete)	60mm/81mm	60mm/81mm
housing material	PA	PA
operating temperature	-25 ... +70°C	-25 ... +70°C
degree of protection (EN 60529)	IP67	IP67
connection	M12-connector, 3-pin	2m PVC-cable, 2-wire
connection accessories	e.g. VK200025	-
mounting accessories (clip)	e.g. AY000061	e.g. AY000061
accessories (universal holder)	-	-

article-no.	IN340107	IN340127	IN344107
switching distance	20.0mm	20.0mm	20.0mm
output signal	pnp, no	pnp, no	AC, no
connection	cable	M12-connector	cable
			
TECHNICAL DATA			
switching distance (Sn)	20mm	20mm	20mm
output signal	pnp, no	pnp, no	AC, no
mounting	non-flush	non-flush	non-flush
operating voltage	10 ... 60V DC	10 ... 60V DC	20 ... 250V AC
current consumption (w/o load)	≤ 8.0mA	≤ 8.0mA	≤ 2.0mA
output current (max. load)	200mA	200mA	400mA
voltage drop (max. load)	2.5V DC	2.5V DC	5.0V AC
norm measuring plate	acc. to EN 60947-5-2	acc. to EN 60947-5-2	acc. to EN 60947-5-2
hysteresis	< 10%	< 10%	< 10%
repeat accuracy	≤ 5%	≤ 5%	≤ 5%
correction factors (St37/Alu/Ms)	1/0.4/0.4	1/0.4/0.4	1/0.4/0.4
correction factors (stainl. steel/Cu)	0.7/0.3	0.7/0.3	0.7/0.3
switching frequency	100Hz	100Hz	10Hz
display (signal)	yellow LED	-	yellow LED
short-circuit protection	+	+	-
reverse polarity protection	+	+	+
dimensions	Ø 34mm	Ø 34mm	Ø 34mm
length (thread/complete)	-/85mm	-/82mm	-/85mm
housing material	PBT	PBT	PBT
operating temperature	-25 ... +70°C	-25 ... +70°C	-25 ... +75°C
degree of protection (EN 60529)	IP67	IP67	IP67
connection	2m PVC-cable, 3-wire	M12-connector, 3-pin	2m PVC-cable, 2-wire
connection accessories	-	e.g. VK200025	-
mounting accessories (clip)	incl. in scope of delivery	incl. in scope of delivery	incl. in scope of delivery

article-no.	IN800420	IN804300	INKA0420	INKA4300
switching distance	55mm	55mm	100mm	70mm
output signal	pnp, no / nc	AC, no / nc	pnp, no / nc	AC, no / nc
connection	M12-connector	cable	M12-connector	cable
				
TECHNICAL DATA				
switching distance (Sn)	55mm	55mm	100mm	70mm
output signal	pnp, no/nc	AC, no/nc	pnp, no/nc	AC, no/nc
mounting	non-flush	non-flush	non-flush	non-flush
operating voltage	10 ... 55V DC	20 ... 250V AC	10 ... 55V DC	20 ... 250V AC
current consumption (w/o load)	≤ 4.0mA	≤ 2.5mA	≤ 4.0mA	≤ 2.5mA
output current (max. load)	400mA	400mA	400mA	400mA
voltage drop (max. load)	2.0V DC	6.0V AC	2.0V DC	6.0V AC
norm measuring plate	acc. to EN 60947-5-2	acc. to EN 60947-5-2	acc. to EN 60947-5-2	acc. to EN 60947-5-2
correction factors (St37/Alu/Ms)	1/0.4/0.4	1/0.4/0.4	1/0.4/0.4	1/0.4/0.4
correction factors (stainl. steel/Cu)	0.7/0.3	0.7/0.3	0.7/0.3	0.7/0.3
switching frequency	20Hz	10Hz	20Hz	10Hz
display (signal)	yellow LED	yellow LED	yellow LED	yellow LED
short-circuit protection	+	-	+	-
reverse polarity protection	+	+	+	+
dimensions	Ø 80mm	Ø 80mm	Ø 105mm	Ø 105mm
length (thread/complete)	-/40mm	-/40mm	-/40mm	-/40mm
housing material	PBT	PBT	PBT	PBT
operating temperature	-25 ... +75°C	-25 ... +75°C	-25 ... +75°C	-25 ... +75°C
degree of protection (EN 60529)	IP67	IP67	IP67	IP67
connection	M12-connector, 4-pin	2m PVC-cable, 2-wire	M12-connector, 4-pin	2m PVC-cable, 2-wire
connection accessories	e.g. VK200325	-	e.g. VK200325	

article-no.	INKF0420	INKF4300
switching distance	120mm	120mm
output signal	pnpno/nc	AC,no/nc
connection	M12-connector	cable
 		
TECHNICAL DATA		
switching distance (Sn)	120mm	120mm
output signal	pnp, no/ nc	AC, no/nc
mounting	non-flush	non-flush
operating voltage	10 ... 55V DC	20 ... 250V AC
current consumption (w/o load)	≤ 4.0mA	≤ 2.5mA
output current (max. load)	400mA	400mA
voltage drop (max. load)	2.0V DC	6.0V AC
norm measuring plate	acc. to EN 60947-5-2	acc. to EN 60947-5-2
correction factors (St37/Alu/Ms)	1/0.4/0.4	1/0.4/0.4
correction factors (stainl. steel/Cu)	0.7/0.3	0.7/0.3
switching frequency	20Hz	10Hz
display (signal)	yellow LED	yellow LED
short-circuit protection	+	3A/10ms
reverse polarity protection	+	+
dimensions	Ø 160mm	Ø 160mm
length (thread/complete)	-/60mm	-/60mm
housing material	PBT	PBT
operating temperature	-25 ... +75°C	-25 ... +75°C
degree of protection (EN 60529)	IP67	IP67
connection	M12-connector, 4-pin	2m PVC-cable, 2-wire
connection accessories	e.g. VK200325	-

article-no.	IN850420	IN854300
switching distance	140mm	140mm
output signal	pnp,no/nc	AC,no/nc
connection	M12-connector	cable

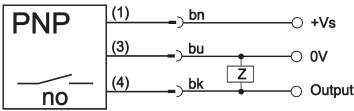


TECHNICAL DATA

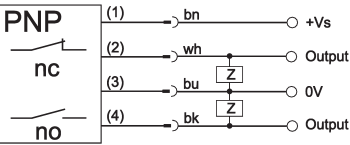
switching distance	140mm	140mm
output signal	pnp, no/nc	AC, no/nc
mounting	non-flush	non-flush
operating voltage	10 ... 55V DC	20 ... 250V AC
current consumption (w/o load)	≤ 4.0mA	≤ 2.5mA
output current (max. load)	400mA	400mA
voltage drop (max. load)	2.0V DC	6.0V AC
norm measuring plate	acc. to EN 60947-5-2	acc. to EN 60947-5-2
correction factors (St37/Alu/Ms)	1/0.4/0.4	1/0.4/0.4
correction factors (stainl. steel/Cu)	0.7/0.3	0.7/0.3
switching frequency	20Hz	10Hz
display (signal)	yellow LED	yellow LED
short-circuit protection	+	3A/10ms
reverse polarity protection	+	+
dimensions	Ø 200mm	Ø 200mm
length (thread/complete)	-/60mm	-/60mm
housing material	PBT	PBT
operating temperature	-25 ... +75°C	-25 ... +75°C
degree of protection (EN 60529)	IP67	IP67
connection	M12-connector, 4-pin	2m PVC-cable, 2-wire
connection accessories	e.g. VK200325	-

connection

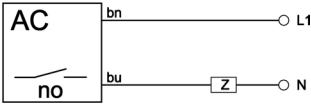
DC cable connector device



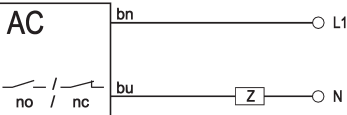
DC cable connector device



AC cable device

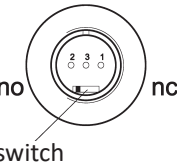


AC cable device



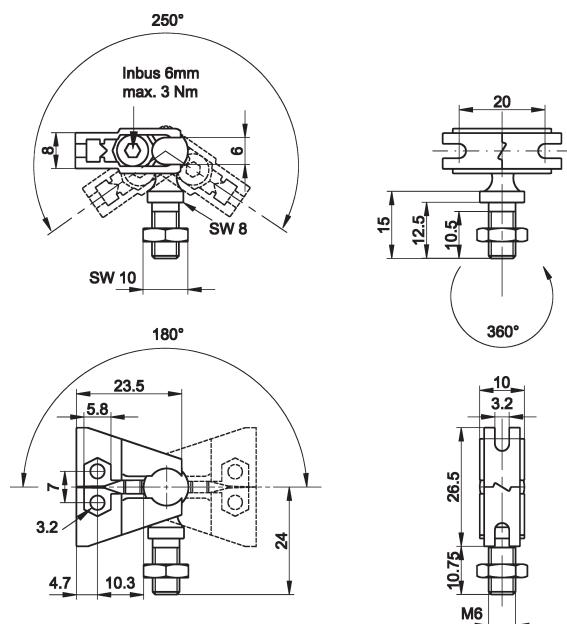
wire colors: bn = brown (1), wh = white (2), bu = blue (3), bk = black (4)

NO/NC switchover by removing the cable gland (AC devices) with designs IN80, IN85, INKA, INKF!

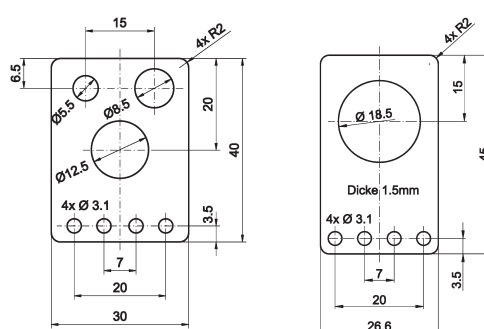


mounting accessories (universal holder) AY000115 and AY000117

consisting of **base module**



... and **fitting panel**



ACCESSORIES

article-no.	description	note
AY000088	base module *	jaw: stainless steel, ball pin: galvanized steel
AY000115	mounting kit for M5, M8, M12 sensors	stainless steel
AY000117	mounting kit for M18 sensors	stainless steel

* The **AY000088** base module is contained in every mounting kit.

Material of bolts and nuts: galvanized steel

mounting material / quick clips

fig. 1

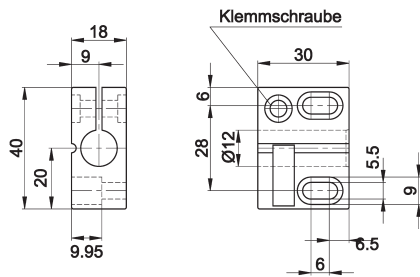


fig. 2

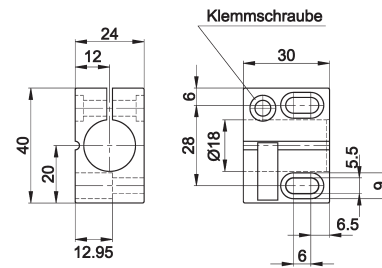


fig. 3

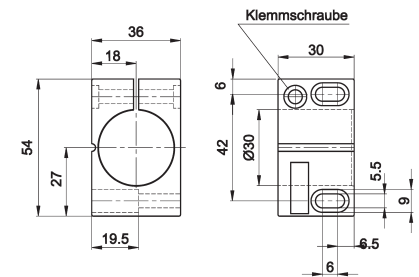


fig. 4

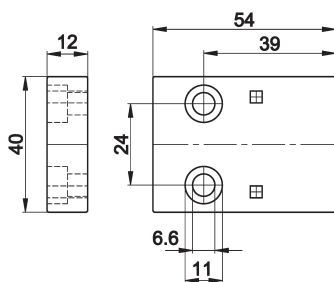
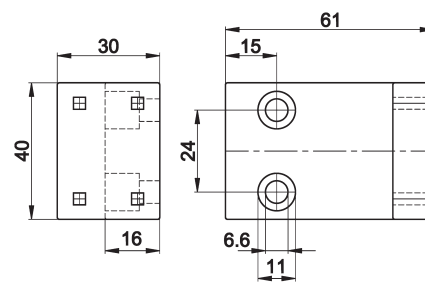


fig. 5



ACCESSORIES

article-no.	description	note	image
AY000049	quick clip 12, plastic	sensor 12round, mounting clip	1
AY000050	quick clip 12, plastic	sensor 12round, mounting clip, positive stop	1
AY000051	quick clip 18, plastic	sensor 18round, mounting clip	2
AY000052	quick clip 18, plastic	sensor 18round, mounting clip, positive stop	2
AY000061	quick clip 30, plastic	sensor 30round, mounting clip	3
AY000062	quick clip 30, plastic	sensor 30round, mounting clip, positive stop	3
AY000053	base, straight, plastic	for quick clip 12 + 18round	4
AY000054	base, angular, plastic	for quick clip 12 + 18round	5
AY000055	label, white	for quick clip 12 + 18 + 30round	without

This data sheet contains only the available standard versions. Please contact us for other output and connection versions.

We will be pleased to supply the matching cable socket for your connector devices. Please refer to the list in catalog chapter "accessories" under "cable sockets **ipf-SENSORFLEX®**" or search our website for "VK".

Warning: Never use these devices in applications where the safety of a person depends on their functionality.

NOTES