Inductive Ring Sensors
Ø 10 - 270 mm
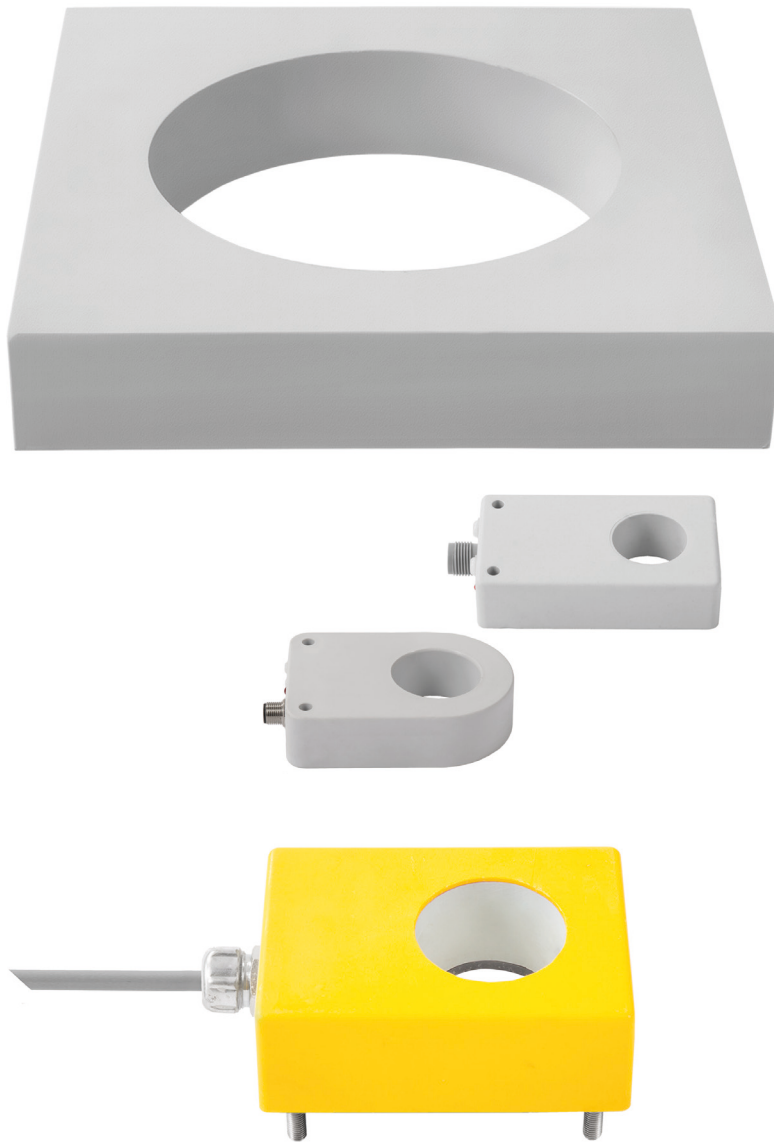
Detection of metallic objects

Nails - Welding bolts - Counting of parts - Ejection monitoring - Wire crack indication

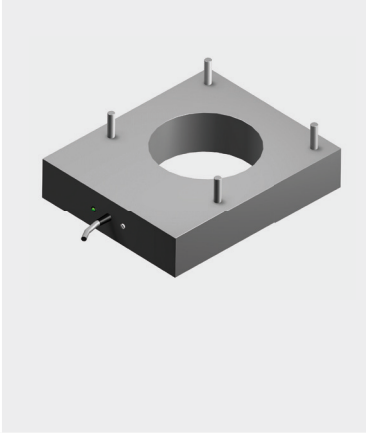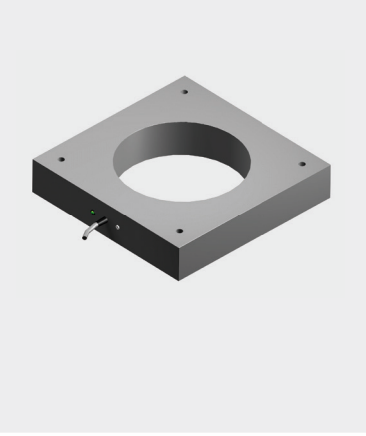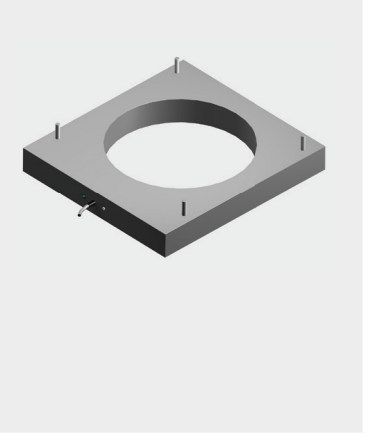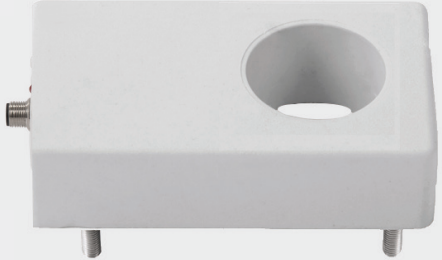| Aperture Ø [mm]	10	15	25	
Sensitivity	≥ 2 mm Ø (Steel ball St37)	≥ 3 mm Ø (Steel ball St37)	≥ 4 mm Ø (Steel ball St37)	
Sensitivity adjustable	yes	yes	yes	
Target velocity	max. 60 m/s	max. 60 m/s	max. 60 m/s	
Dimension L x W x H	80 x 45 x 20 mm	80 x 45 x 20 mm	80 x 45 x 20 mm	
Fixing	2 x Ø 4,5 mm, distance 33 mm	2 x Ø 4,5 mm, distance 33 mm	2 x Ø 4,5 mm, distance 33 mm	
Type	**IKV 010**	**IKV 015**	**IKV 025**	

Aperture Ø [mm]	120	170	270
Sensitivity	≥ 30 mm Ø (Steel ball St37)	≥ 40 mm Ø (Steel ball St37)	≥ 60 mm Ø (Steel ball St37)
Sensitivity adjustable	yes	yes	yes
Target velocity	max. 10 m/s	max. 10 m/s	max. 5 m/s
Dimension L x W x H	240 x 200 x 50 mm	260 x 260 x 50 mm	390 x 360 x 50 mm
Fixing	4 x M8 x 30, 140 x 160 mm	4 x Ø 9 mm, 210 x 210 mm	4 x M8 x 30, 290 x 320 mm

The response sensitivity can be adjusted. The nominal sensitivity is referred to a ball of steel (St37). In case of pins or wires considerably smaller diameters are detected. Brass, aluminium or copper reduce the sensitivity.

The output of the ring sensor operates statically, the output is switched as long as a metallic object is in the aperture. When objects fall through the ring sensor quite quickly the output pulses can be very short. The optional pulse extension acts as an adjustable switch-off delay and enables reliable detection even with very short dwell times for the connected signal processing.

	45	**60**	**80**
	≥ 9 mm Ø (Steel ball St37)	≥ 12 mm Ø (Steel ball St37)	≥ 16 mm Ø (Steel ball St37)
	yes	yes	yes
	max. 20 m/s	max. 15 m/s	max. 15 m/s
	115 x 80 x 30 mm	145 x 100 x 50 mm	200 x 150 x 64 mm
	2 x Ø 7 mm, distance 60 mm	4 x M8 x 30, 120 x 75 mm	4 x M8 x 30, 160 x 110 mm
	IKV 045	**IKV 060**	**IKV 080**

The attainable sensitivity depends on the material of the metal object and can be calculated using the correction factor:

material	metal foil	steel	stainless steel	brass	aluminium	copper	nickel	cast iron
correction factor	1,2	1	0,5 ... 0,8	0,45	0,4	0,3	0,7	0,93 ... 1,05

$$\text{Sensitivity (new)} = \text{Sensitivity (Steel ball)} \times \frac{1}{\text{correction factor}}$$

Mounting in series with small distance between the sensor can result in troubles because of interference. This can be prevented by using either a combination of sensors with offset oscillation frequencies (see type code) or ring sensors of the series IKVS with integrated shielding.

Ring sensors series IKVS with integrated screening

- suitable for row packaging on the narrowest room
- adjustable sensitivity
- three diameter sizes in n.c. or n.o. version
- with plug or connection cable available
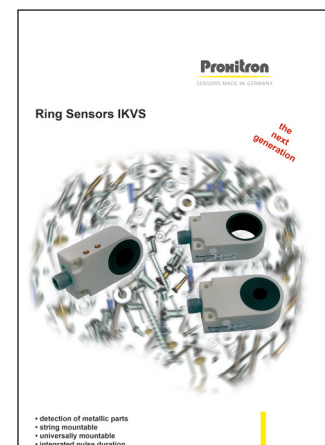
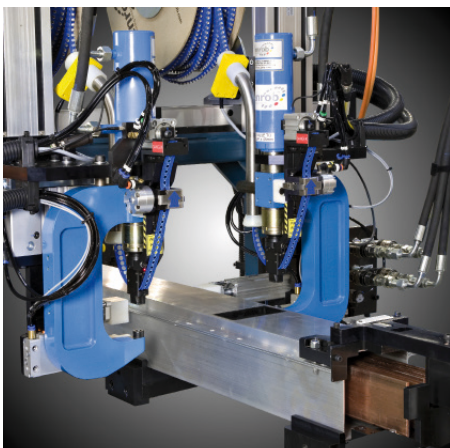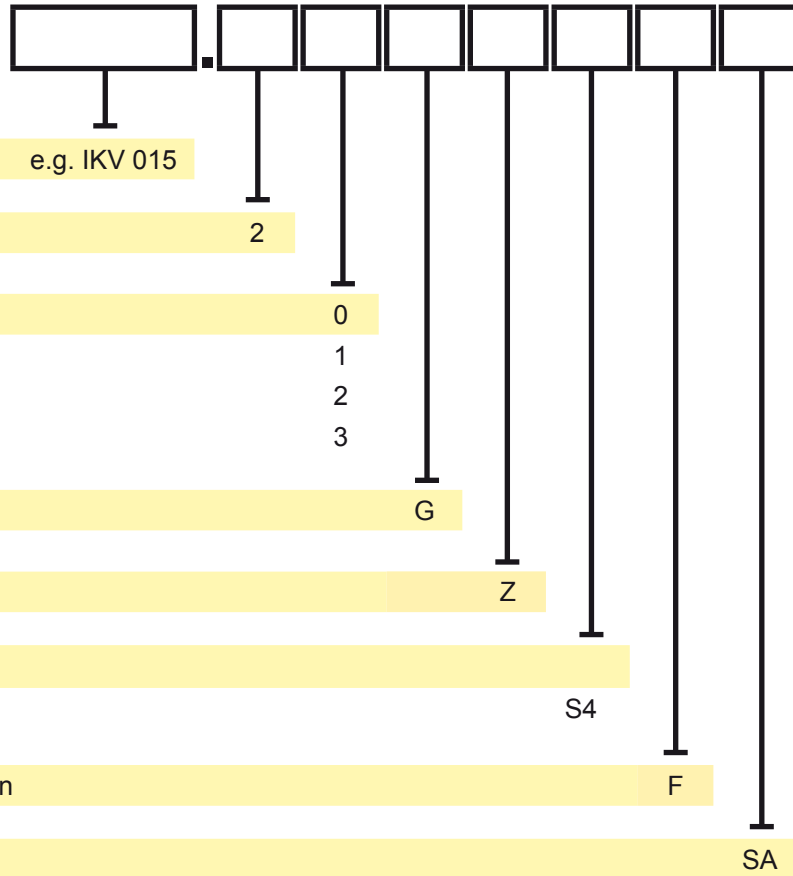Please also view our brochure about the ring sensor series IKVS.

Ring Sensors
General information

Inductive ring sensors made by Proxitron detect metal objects inside the ring-shaped entry. In particular the supply of small objects e.g. nails or bolts is reliably observable. The smallest design has a size of 60x30x16 mm only while having an aperture of 10 mm up to 25 mm.

- **detects nails, screws, studs etc.**
- **parts counting**
- **ejection detection**
- **flow control in assembly technology**
- **congestion reporting in delivery tubing**
- **simple installation**
- **fully reliable**

Type code

Type (see table previous page)	e.g. IKV 015
10 - 30 V DC	2
NPN normally open	0
NPN normally closed	1
PNP normally open	2
PNP normally closed	3
Short circuit protection	G
Pulse extension adjustable 2,5 - 250 m/s	Z
Connection cable	
Plug M12x1 DC	S4
Offset oscillation frequency for row installation	F
Customer specific version	SA

sales.ans@ansvietnam.com