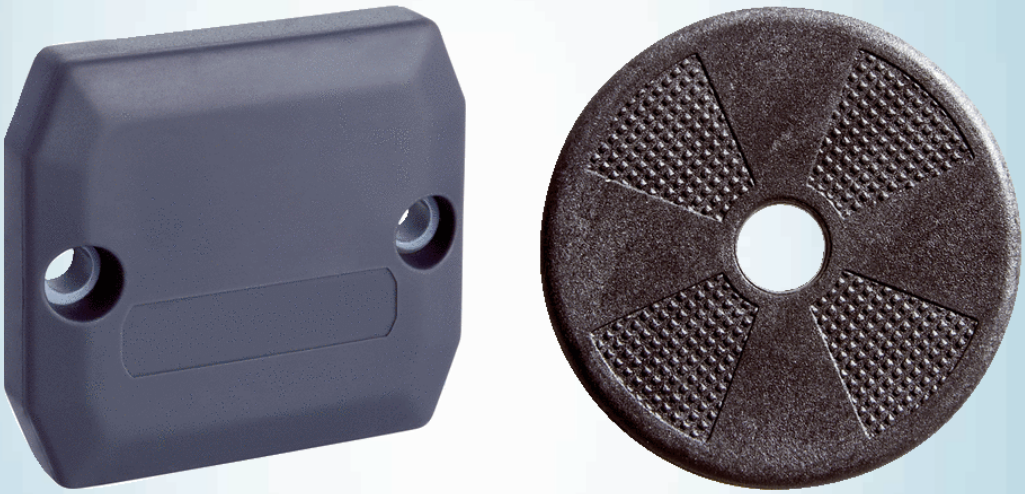
Product family overview



RFID transponder

Object identification with the help of HF and UHF RFID data cards

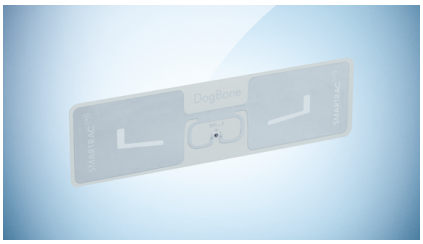
SICK
Sensor Intelligence.

Advantages

Overview of RFID transponders

An RFID transponder (also: RFID tag) comprises an antenna and a chip (also: IC, Integrated Circuit). The chip controls the communication with the RFID reader and serves as a memory bank for the relevant data (up to 64,000 bits) necessary to identify the object. The number of types of RFID transponders is growing as the acceptance and success of RFID technology increases in the market. Different RFID tags solve a wide variety of tasks.

RFID transponder types and their characteristics

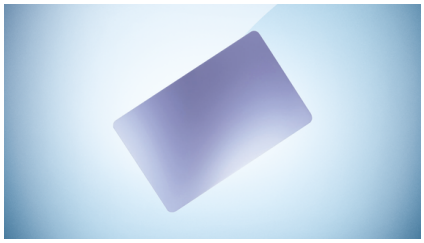


RFID labels and stickers
Antenna and chip with cover foil made from paper or plastic. Economical transponder format that is often used for container identification.

RFID hard tags
Very rugged transponder, often on-metal. Well suited for harsh ambient or high temperature conditions, e.g., skid ID.

RFID disk tags
Round transponder with mounting hole in the center. Frequently used in the HF range.

RFID coin tags
Round transponder without a mounting hole. Frequently used in the LF/HF range.

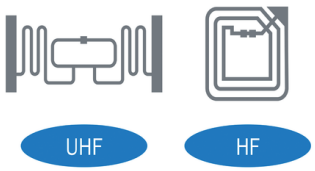


RFID ISO cards
Transponder in the format of a business card. Standardized format that is often used to control the access of people.

RFID cylinder tags
Transponder in a cylindrical shape. The RFID reader under the vehicle reads RFID tags on the floor/ground to determine the position of the vehicle.

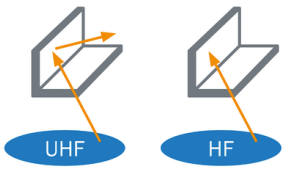
Which transponder is the right one for your application?

When selecting and affixing a transponder, the required performance, the ambient conditions and the installation situation, in particular, need to be taken into consideration. The most important information is listed here to support your decision. Whatever choice you make, SICK always offers you the right transponder.

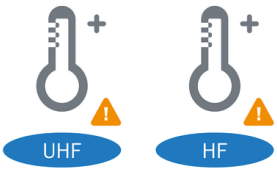


read range
A transponder has to be selected in such a way that the required read ranges can be reliably achieved. Essential characteristics are the antenna size and the used transponder IC (integrated circuit), but the application environment also has to be considered.

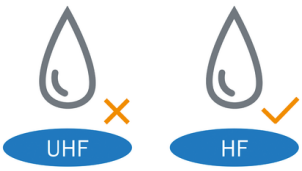
Memory size
Transponders have different storage volumes, depending on the built in IC. The transponders have a unique identification number and a user memory for additional data. The requirements for the respective memory size result from the desired data concept.



Metal
Metal absorbs HF waves and reflects UHF waves. Therefore, use special on-metal transponders or ensure sufficient distance between the transponder and metal.



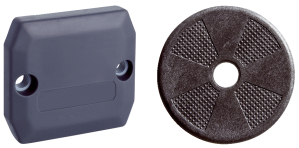
Temperature
The ambient temperature affects the selection and performance of a transponder. The frequency and duration of the thermal exposure play an important role in this regard.



Fluids
Liquids do not have a significant influence on HF transponders, but in the case of UHF transponders, they can cause attenuation and range reduction.

Region-dependent frequency tuning
HF transponders can be used worldwide. In the case of UHF transponders, there are transponders for worldwide use and transponders with regionally optimized frequency tuning.

RFID transponder



Technical data overview

Frequency band	HF (13.56 MHz) / UHF (860 MHz ... 960 MHz) (depending on type)
Weight	+ 0.55 g ... + 34 g (depending on type)

Product description

The RFID transponder (also called RFID tags) from SICK work on the basis of high frequency (HF) or ultra-high frequency (UHF). The tags work passively and use the energy of the RFID read/write device for data transmission. Both HF and UHF transponders follow a standard which is valid worldwide. The large range of transponders regarding dimensions, size, storage size, ambient operating temperature, mounting and read range enable use in many different applications. RFID tags can save up to 64 bits of data and can be identified up to a read range of 10 m. Together with the RFID read/write devices, they create reliable and future-proof identification solutions.

At a glance

- Passive transponders
- Compliance with standards
- Mounting on various materials possible, even on metallic surfaces
- No visual contact required
- Reading and writing
- Ambient temperature range from −40 °C to +230 °C

Your benefits

- Low price and maintenance-free
- Standard-compatible transponders enable future-proof solutions
- High flexibility thanks to the option of mounting on different materials and functions which make visual contact to the RFID read/write device unnecessary
- Variable use due to quick and easy overwriting of transponder data
- The rugged design enables reliable operation - even in tough industrial environments

Fields of application

- High-temperature applications in paint lines
- Identification of containers and pallets
- Identification of vehicles and trains

Ordering information

Other models and accessories ➜ www.sick.com/RFID_transponder

Carrier frequency	Special features	Memory capacity (UII / user memory)	Dimensions (L x W x H)	Diameter	Type	Part no.
13.56 MHz	–	2528 Bit (79 x 4 Byte)	53.98 mm x 85.6 mm x 0.76 mm	–	HF transponder, ISO card	6037848
		896 Bit (28 x 4 Byte)	–	30 mm	HF transponder, disk	6051701
			14 mm x 7 mm	7 mm	HF transponder, cylinder	6067993
			18 mm x 36 mm x 0.42 mm	–	HF Transponder, Paper label	6087790
					HF transponder, paper label	6052794
			30 mm x 5 mm	5 mm	HF transponder, cylinder	6044368
			49 mm x 81 mm x 0.42 mm	–	HF Transponder, Paper label	6087791
					HF transponder, paper label	6037763
	High Temperature	2048 Bit (64 x 4 Byte)	–	22 mm	HF transponder, coin	6033173
		2528 Bit (79 x 4 Byte)	–	50 mm	HF transponder, disk	6033781
			21.7 mm	4 mm	HF transponder, glass	6039237
		896 Bit (28 x 4 Byte)	–	16 mm	HF transponder, coin	6041592
				30 mm	HF transponder, disk	6034740
			6.5 mm x 51 mm x 51 mm	–	HF transponder, square, high-temp	6060918
	High Temperature, High Memory	16,000 Bi (250 x 8 Byte)	–	30 mm	HF transponder, disk	6043514
				50 mm	HF transponder, disk	6042212
	On Metal	896 Bit (28 x 4 Byte)	–	22 mm	HF transponder, disk	6052179
			2.5 mm x 25 mm x 5 mm	–	HF Transponder, rectangular, on-metal	6039051
			37 mm x 90 mm x 7 mm	–	HF Transponder, rectangular, on-metal	6047938

Carrier frequency	Special features	Memory capacity (UII / user memory)	Dimensions (L x W x H)	Diameter	Type	Part no.
865 MHz ... 868 MHz	On Metal	448/2048 Bit	54 mm x 25 mm x 1.8 mm	–	UHF Transponder, label, on-metal, ETSI	6084214
		496/1280 Bit	26 mm x 155 mm x 14.5 mm	–	UHF Transponder, Rectangular, On-Metal, ETSI	6086971
		≤ 448/640 Bit	26 mm x 155 mm x 14.5 mm	–	UHF Transponder, rectangular, on-metal, ETSI	6061180
	On Metal, ESD, High Temperature	496/1280 Bit	80 mm x 35 mm x 1.2 mm	–	UHF Transponder, label, ESD, on-metal, ETSI	6077157
				–		6087788
	On Metal, High Temperature	96/32 bit	32 mm x 10.8 mm x 6 mm	–	UHF Transponder, Rectangular, On-Metal, ETSI	6086974
		96/512 Bit	12.8 mm x 31.7 mm x 4.97 mm	–	UHF Transponder, rectangular, on-metal, ETSI	6070746
		96/688 Bit	55 mm x 36.2 mm x 7.5 mm	–	UHF Transponder, Rectangular, On-Metal & High-Temp, ETSI	6084487
865 MHz ... 928 MHz	–	128/512 Bit	18 mm x 122 mm x 2 mm	–	UHF Transponder, rectangular, global	6068184

Carrier frequency	Special features	Memory capacity (UII / user memory)	Dimensions (L x W x H)	Diameter	Type	Part no.
			3.98 mm 35.6 mm 0.76 mm	–	UHF Transponder, ISO-card, global	6051820
			73 mm x 14 mm x 0.3 mm	–	Special label	6054385
		28/752 bits	3.98 mm 35.6 mm 0.76 mm	–	UHF Transponder, ISO-card, global	6086973
			73 mm x 17 mm x 0.2 mm	–	UHF Transponder, Paper label, global	6086972
		0/3,328	11 mm x 41 mm x 5.15 mm	–	UHF Transponder, rectangular, on-metal & high memory, global	6054025
		448/2048 Bit	27 mm x 97 mm x 0.2 mm	–	UHF Transponder, label, global	6073284 6087789
		496/128 Bit	15 mm x 97 mm x 0.2 mm	–	UHF Transponder, paper label, global	6070051
			18 mm x 122 mm 2 mm	–	UHF Transponder, Rectangular, global	6088050
	High Temperature	256/512 Bit	70 mm x 110 mm 0.42 mm	–	UHF Transponder, rectangular, high-temp, global	6052355
		96/240 Bit	70 mm x 110 mm 0.42 mm	–		6049636
	On Metal	128/512 Bit	27 mm x 27 mm x 6 mm	–	UHF Transponder, square, on-metal, global	6052186
		28/752 b	54 mm x 25 mm x 1.8 mm	–	UHF Transponder, label, on-metal, ETSI	6087787
		496/128 Bit	21 mm x 85 mm x 10 mm	–	UHF Transponder, Rectangular, On-Metal, global	6086968
			27 mm x 27 mm x 6 mm	–	UHF Transponder, Square, On-Metal, global	6086969
		96/688 Bit	21 mm x 85 mm x 10 mm	–	UHF Transponder, Rectangular, On-Metal, global	6080937
	On Metal, High Memory	240/64,000	8 mm x 65 mm x 45 mm	–	UHF Transponder, rectangular, on-metal & high memory, global	6061389
	On Metal, High Temperature	128/512 Bit	47.5 mm 51.5 mm 10 mm	–	UHF Transponder, rectangular, on-metal, global	6052346
		496/128 Bit	47.5 mm 51.5 mm 10 mm	–	UHF Transponder, Rectangular, On-Metal, global	6086967

Carrier frequency	Special features	Memory capacity (UII / user memory)	Dimensions (L x W x H)	Diameter	Type	Part no.
902 MHz ... 928 MHz	On Metal	128/512 Bit	226 mm x 155 mm x 14.5 mm	–	UHF Transponder, rectangular, on-metal, FCC	6060819
		496/128 Bit	226 mm x 155 mm x 14.5 mm	–	UHF Transponder, Rectangular, On-Metal, FCC	6086970
	On Metal, High Temperature	96/32 bit	32 mm x 10.8 mm x 6 mm	–		6086975
		96/512 Bit	12.8 mm x 31.7 mm x 4.97 mm	–	UHF Transponder, rectangular, on-metal, FCC	6070747
		96/688 Bit	55 mm x 36.2 mm x 7.5 mm	–	UHF Transponder, Rectangular, On-Metal & High-Temp, FCC	6084486

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com