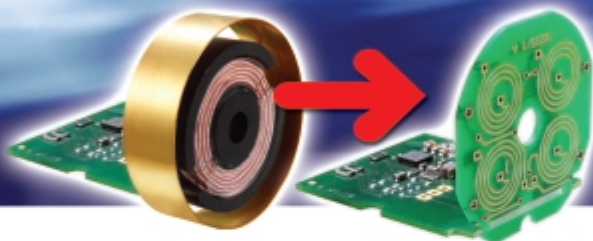


Evolution ...



... Revolution!



TURCK

Industrial
Automation

**THE NEW
GENERATION
OF INDUCTIVE
SENSORS**



uprox⁺

HIGHEST SWITCHING DISTANCE AND FACTOR 1

TURCK – YOUR FIRST CHOICE IN INDUSTRIAL AUTOMATION

For over 40 years, TURCK has been offering innovative solutions for the diverse needs of modern industrial automation. As the leading pioneer and pacemaker in sensor technology, the company was one of the first to concentrate on the development of electronic components for the automation of challenging manufacturing processes.

Everything from a single source

Based on the company's extensive knowledge of industrial automation, TURCK today is in a position to offer products and solutions for the full spectrum of automation tasks: with an enormously versatile range of more than 13,000 sensor, interface and fieldbus technology products, TURCK offers highly effective product solutions for every possible application.

These products give our customers a competitive edge, reduce failures and down-times to a minimum and contribute to highly effective planning and implementation of production processes.

Your forward-thinking partner

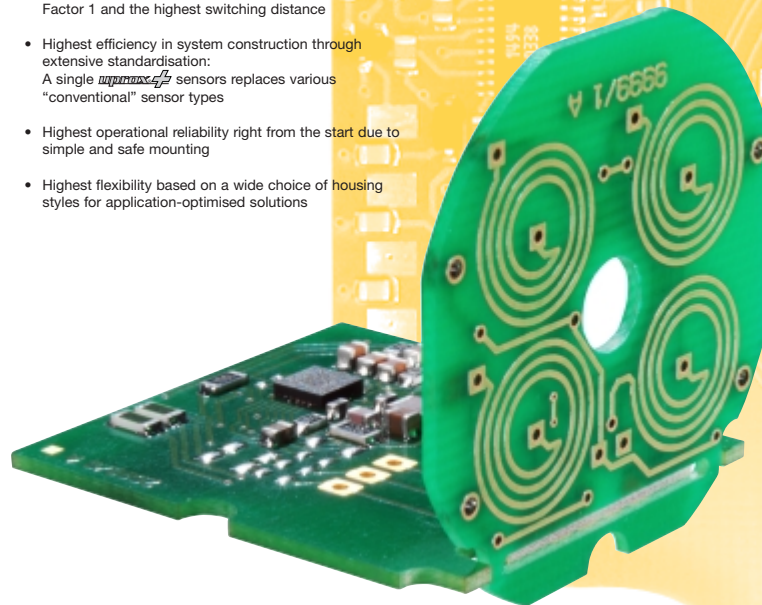
Our strategy is simple yet challenging: we want to provide our customers with simply the best – quickly, flexibly and reliably. And following this motto we ensure the efficiency, quality and safety of industrial plants all over the world. The continuous development of new products and solutions – for the future benefit of our customers and partners – proves that we believe in innovation as a constant process.



HIGHEST SWITCHING DISTANCE AND FACTOR 1

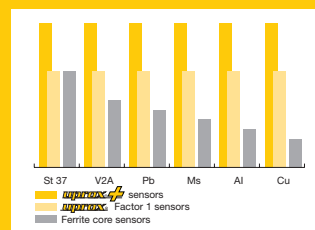
With the development of the new *uprox+* sensor, TURCK impressively demonstrates its innovation skills. The proven performance spectrum of our *uprox+* sensors has been consistently optimised to meet increasing customer demands. Why not profit from the unique plus points of the new *uprox+* generation?

- Highest switching distance:
The new *uprox+* sensors from TURCK offer Factor 1 and the highest switching distance
- Highest efficiency in system construction through extensive standardisation:
A single *uprox+* sensor replaces various "conventional" sensor types
- Highest operational reliability right from the start due to simple and safe mounting
- Highest flexibility based on a wide choice of housing styles for application-optimised solutions



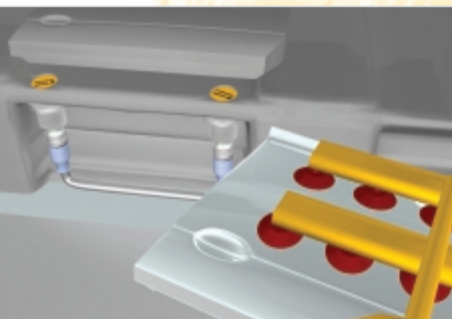
Factor 1 redefined!

Based on their novel coil concept, *uprox+* sensors offer unrivalled performance. The core component of the new sensor generation is a flexible patented multi-coil system, which replaces the conventional wound coil. The resulting extraordinarily high switching distance and the unique flexibility of the housing concept make *uprox+* by far the best factor 1 sensor ever available!



uprox® – POSITION DETECTION WITHOUT ANY COMPROMISES

Whether for the automotive industry, machine engineering or for transport and handling: our new **uprox®** sensors provide perfect solutions for all your requirements. Profit from the unique performance spectrum for effective process optimisation and the resulting cost savings!



M18, mechanically protected through recessed mounting.



CK40, partially flush-mounted on a one-rail trolley conveyor.

High system availability

Due to the various mounting options, IP68 protection rating, the high level of magnetic field immunity and EMC, the new **uprox®** sensors offer outstanding operational reliability, also in the harsh industrial environment. Use these advantages to optimise your production processes:

- Less mechanical damage through safe recessed mounting – enhanced reliability
- Short down-times, based on the excellent availability of spare parts at lower cost
- Excellent interference immunity due to the high level of EMC

Extremely service-friendly

Owing to their flexible mounting options and their high switching distance, the new **uprox®** sensors accept higher mechanical tolerances than traditional standard sensors. These advantages pay off for you promptly:

- Simple adjustment due to the highest switching distance
- A maximum degree of freedom in set-up based on the reliable sensor performance, regardless of the mounting mode, e.g., partial embedding or recessed sensor mounting
- Minimum maintenance due to an intelligently streamlined variety of types

Highest switching distance

Owing to their novel patented coil technology, **uprox®** sensors feature a switching distance that is up to 250% higher than that of conventional inductive sensors with a ferrite core. This means that the sensor is superior to any standard sensor of the same size. Make use of this outstanding performance to optimise your applications!



Factor 1

The innovative **uprox®** sensors set a new benchmark in metal detection. They are capable of detecting materials such as iron, stainless steel, copper, aluminium and brass at the same high distance with the highest precision.

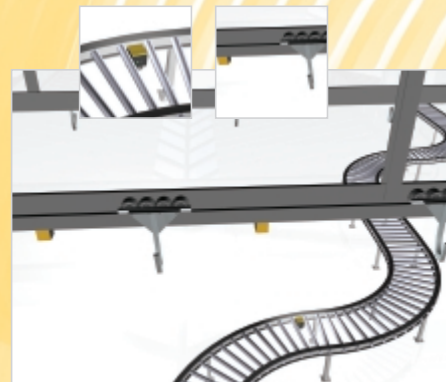
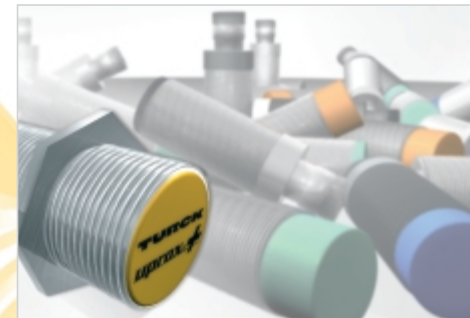


uprox® – PROCESS OPTIMISATION WITH AN INTELLIGENTLY STREAMLINED RANGE

Efficient standardisation

It's good news that several conventional sensors can be replaced by a single **uprox®** sensor. You will profit from the associated reduction of sensor inventories. The advantages of the new sensors:

- Only a few sensor variants needed to cover the entire range of applications
- Low average prices because there is no need for special devices
- Reduced training requirements due to the lean product programme



A maximum degree of freedom

Whether recessed mounting of flush-mountable sensors or partial embedding of non-flush devices – the new **uprox®** sensors provide both maximum planning freedom and maximum ease of installation. All the sensor's advantages at a glance:

- A multitude of solutions with only a few device types
- A high degree of freedom in construction
 - ➔ Avoidance of construction faults
 - ➔ Avoidance of unnecessary conflicts between mechanical and electrical construction
- Simple mounting by eliminating the need for additional mounting accessories
- A high degree of freedom in construction

A high level of EMC

All **uprox®** sensors not only fulfil the present standard EN 50082-2, but also exceed the strict provisions of the EN61000-4-6, which will be integral part of the proximity switch standard from 2006 on. Therefore you are optimally protected against conducted interference (for instance, due to frequency converters). Moreover, your installations are perfectly equipped for the future!



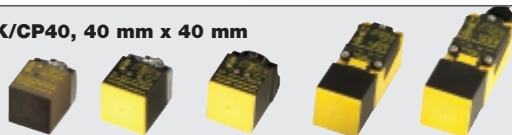
High magnetic field immunity

uprox® sensors do not incorporate a ferrite core and are thus not susceptible to strong magnetic fields which occur, for example, in electric welding processes or near lifts or electrical furnaces.





Type CK/CP40, 40 mm x 40 mm



Mounting mode	Switching distance Sn	Type designation	Ident. number	Switching frequency	Ambient temperature	Housing material	Connection
	20 mm	BI20U-CK40-AP6X2-H1141	1627233	250 Hz	-25 up to +75 °C	PBT	Connector M12 x 1
	20 mm	BI20U-CP40-AP6X2	1627232	250 Hz	-25 up to +75 °C	PBT	Terminal chamber
	30 mm	BI30U-CK40-AP6X2-H1141	1625829	250 Hz	-25 up to +75 °C	PBT	Connector M12 x 1
	30 mm	BI30U-CP40-AP6X2	1625830	250 Hz	-25 up to +75 °C	PBT	Terminal chamber

Mounting mode	Switching distance Sn	Switching distance 1-side embedding	Switching distance 2-side embedding	Switching distance 3-side embedding	Switching distance full embedding	Type designation	Ident. number	Switching frequency	Ambient temperature	Housing material	Connection
	50 mm	35 mm	25 mm	20 mm	17 mm	NI50U-CK40-AP6X2-H1141	1625837	250 Hz	-25 up to +75 °C	PBT	Connector M12 x 1
	50 mm	35 mm	25 mm	20 mm	17 mm	NI50U-CP40-AP6X2	1625831	250 Hz	-25 up to +75 °C	PBT	Terminal chamber

Type Q80, 80 mm x 80 mm



Mounting mode	Switching distance Sn	Switching distance 1-side embedding	Type designation	Ident. number	Switching frequency	Ambient temperature	Housing material	Connection
	50 mm	50 mm	BI50U-Q80-AP6X2-H1141	1608940	250 Hz	-25 up to +75 °C	PBT	Connector M12 x 1
	70 mm	50 mm	NI70U-Q80-VP4X2-H1141	1625833	250 Hz	-25 up to +75 °C	PBT	Connector M12 x 1

GENERAL TECHNICAL DATA:

- Operating voltage 10 to 30 VDC (NI70U-Q80-VP4X2-H1141: 10 to 65 VDC)
- Operating current: 200 mA max.
- Output: normally open, pnp (NI70U-Q80-VP4X2-H1141: SPDT, pnp)

Partial embedding of non-flush sensors

Non-flush uprox+ sensors provide unique flexibility due to the integrated predamping protection function. The metal-free mounting zones can be significantly reduced compared to conventional sensors with a ferrite core. Depending on the sensor type, up to 4-side embedding in metal at a reduced switching distance is admissible (see table).



High magnetic field immunity

uprox+ sensors do not incorporate a ferrite core and are thus not susceptible to strong magnetic fields which occur, for example, in electric welding processes or near lifts or electrical furnaces.



Factor 1

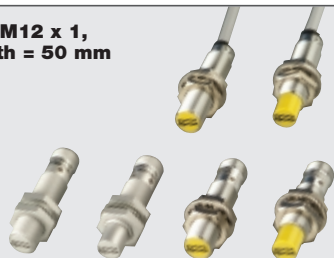
The innovative uprox+ sensors set a new benchmark in metal detection. They are capable of detecting materials such as iron, stainless steel, copper, aluminium and brass at the same high distance with the highest precision.





SENSORS: THREADED BARREL HOUSINGS, FUNCTIONS, MATERIALS

**Type M12 x 1,
Length = 50 mm**



**Type M18 x 1,
Length = 50 mm**



**Type M30 x 1,
Length = 60 mm**



Mounting mode	Switching distance Sn	Type designation	Ident. number	Switching frequency	Ambient temperature	Housing material	Connection
	4 mm	BI4U-M12-AP6X	1634803	2,000 Hz	-25 up to +75 °C	Brass, chrome-plated	PVC cable, 2 m
	4 mm	BI4U-M12-AP6X-H1141	1634804	2,000 Hz	-25 up to +75 °C	Brass, chrome-plated	Connector M12 x 1
	4 mm	BI4U-EM12-AP6X-H1141	1634807	2,000 Hz	-25 up to +75 °C	Stainless steel	Connector M12 x 1
	4 mm	BI4U-MT12-AP6X-H1141	1634809	2,000 Hz	-25 up to +75 °C	Brass, teflonised	Connector M12 x 1

	10 mm	NI10U-M12-AP6X	1634805	1,000 Hz	-25 up to +75 °C	Brass, chrome-plated	PVC cable, 2 m
	10 mm	NI10U-M12-AP6X-H1141	1634806	1,000 Hz	-25 up to +75 °C	Brass, chrome-plated	Connector M12 x 1
	10 mm	NI10U-EM12-AP6X-H1141	1634808	1,000 Hz	-25 up to +75 °C	Stainless steel	Connector M12 x 1
	10 mm	NI10U-MT12-AP6X-H1141	1634810	1,000 Hz	-25 up to +75 °C	Brass, teflonised	Connector M12 x 1

Mounting mode	Switching distance Sn	Type designation	Ident. number	Switching frequency	Ambient temperature	Housing material	Connection
	8 mm	BI8U-M18-AP6X	1644733	1,500 Hz	-25 up to +75 °C	Brass, chrome-plated	PVC cable, 2 m
	8 mm	BI8U-M18-AP6X-H1141	1644731	1,500 Hz	-25 up to +75 °C	Brass, chrome-plated	Connector M12 x 1
	8 mm	BI8U-EM18-AP6X-H1141	1644734	1,500 Hz	-25 up to +75 °C	Stainless steel	Connector M12 x 1
	8 mm	BI8U-MT18-AP6X-H1141	1644730	1,500 Hz	-25 up to +75 °C	Brass, teflonised	Connector M12 x 1

	15 mm	NI15U-M18-AP6X	1635330	1,000 Hz	-25 up to +75 °C	Brass, chrome-plated	PVC cable, 2 m
	15 mm	NI15U-M18-AP6X-H1141	1635331	1,000 Hz	-25 up to +75 °C	Brass, chrome-plated	Connector M12 x 1
	15 mm	NI15U-EM18-AP6X-H1141	1635332	1,000 Hz	-25 up to +75 °C	Stainless steel	Connector M12 x 1
	15 mm	NI15U-MT18-AP6X-H1141	1635333	1,000 Hz	-25 up to +75 °C	Brass, teflonised	Connector M12 x 1

Mounting mode	Switching distance Sn	Type designation	Ident. number	Switching frequency	Ambient temperature	Housing material	Connection
	15 mm	BI15U-M30-AP6X	1636731	750 Hz	-25 up to +75 °C	Brass, chrome-plated	PVC cable, 2 m
	15 mm	BI15U-M30-AP6X-H1141	1636732	750 Hz	-25 up to +75 °C	Brass, chrome-plated	Connector M12 x 1
	15 mm	BI15U-EM30-AP6X-H1141	1636733	750 Hz	-25 up to +75 °C	Stainless steel	Connector M12 x 1
	15 mm	BI15U-MT30-AP6X-H1141	1636734	750 Hz	-25 up to +75 °C	Brass, teflonised	Connector M12 x 1

	30 mm	NI30U-M30-AP6X	1646630	500 Hz	-25 up to +75 °C	Brass, chrome-plated	PVC cable, 2 m
	30 mm	NI30U-M30-AP6X-H1141	1646631	500 Hz	-25 up to +75 °C	Brass, chrome-plated	Connector M12 x 1
	30 mm	NI30U-EM30-AP6X-H1141	1646632	500 Hz	-25 up to +75 °C	Stainless steel	Connector M12 x 1
	30 mm	NI30U-MT30-AP6X-H1141	1646633	500 Hz	-25 up to +75 °C	Brass, teflonised	Connector M12 x 1

Recessed mounting of flush-mountable sensors

When mounting the new **uprox** sensors, only small metal-free zones have to be observed. For additional mechanical protection, they allow recessed mounting by half a turn of the thread – for absolute safety under all mounting conditions!



Partial embedding of non-flush sensors

Non-flush **uprox** sensors provide unique flexibility due to the integrated predamping protection function. The metal-free mounting zones can be significantly reduced compared to conventional sensors with a ferrite core. Non-flush sensors may be embedded in metal up to the upper edge of the thread. The associated reduction of the switching distance is specified with 20% max.



High magnetic field immunity

uprox sensors do not incorporate a ferrite core and are thus not susceptible to strong magnetic fields which occur, for example, in electric welding processes or near lifts or electrical furnaces.



Factor 1

The innovative **uprox** sensors set a new benchmark in metal detection. They are capable of detecting materials such as iron, stainless steel, copper, aluminium and brass at the same high distance with the highest precision.



GENERAL TECHNICAL DATA:

- Operating voltage 10 to 30 VDC
- Operating current: 200 mA max.
- Output: normally open, pnp

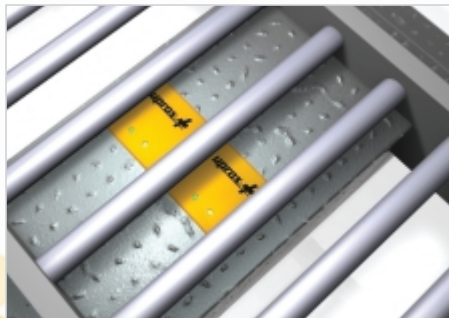


APPLICATION OPTIMISED SOLUTIONS

Enhanced productivity

The technical highlight of all new **uprox+** sensors is the enormously flexible, patented multicoil system, which allows development of novel housing styles optimally adapted to specific application needs. Many new benefits to enhance your productivity:

- Process-specific products provide higher cycle rates
- Quick and easy sensor replacement due to an optimised housing conception
- Minimum maintenance based on application-specific solutions



Product feasibility study: a flat sensor for transport systems – directly mountable into the step plate without additional mounting accessories.

Maximum flexibility

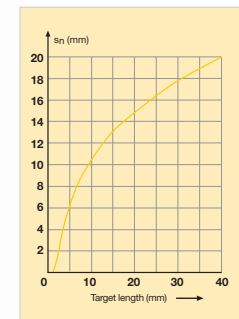
The innovative **uprox+** sensors offer unprecedented mounting convenience. The flexible housing conception provides distinct advantages for all stages of process optimisation – ranging from system planning to installation.

- Simple set-up
- Simple mounting
- Fewer mounting accessories
- Higher level of integration (mechanics and electronics)
- A more compact machine design



TS12, mounted on a screwing machine as an innovative replacement for ring sensors.

Housing style TS12 for detection of small tube-guided parts



GENERAL TECHNICAL DATA:

- Operating voltage 10 to 30 VDC
- Operating current: 200 mA max.
- Output: normally open, pnp
- Maximum target velocity: 20 m/s

Switching distance Sn*	Type designation	Ident. number	Read. rate frequency/ min. pulse duration	Ambient temperature	Housing material	Connection
20 mm	N120U-TS12-AP6X2-V1131	1646640	8 Hz, 100 ms	-25 up to +75 °C	PBT	Connector M8 x 1

*Highest switching distance for small parts (see diagram).

Flexible coil technology

Since the design of the new **uprox+** sensors does not include a ferrite core and a wound coil, you can profit from a maximum degree of flexibility in the housing conception – without any mechanical restrictions!



High magnetic field immunity

uprox+ sensors do not incorporate a ferrite core and are thus not susceptible to strong magnetic fields which occur, for example, in electric welding processes or near lifts or electrical furnaces.



Factor 1

The innovative **uprox+** sensors set a new benchmark in metal detection. They are capable of detecting materials such as iron, stainless steel, copper, aluminium and brass at the same high distance with the highest precision.



Bitte senden Sie mir Unterlagen:

Sensortechnik

- ☐ Induktive Sensoren
- ☐ Induktive Sensoren – *uprox*®+
- ☐ Induktive Sensoren für Schwenkantriebe
- ☐ Magnetfeldsensoren
- ☐ Opto-Sensoren
- ☐ Geräte für den Personenschutz
- ☐ Kapazitive Sensoren
- ☐ Ultraschallsensoren
- ☐ Strömungssensoren
- ☐ Drucksensoren
- ☐ Füllstandssensoren *levelprox*®
- ☐ Temperatursensoren
- ☐ Identifikationssysteme
- ☐ Linearwegsensoren
- ☐ Drehwegsensoren
- ☐ Steckverbinder
- ☐ CD-ROM Sensortechnik

Interfacetchnik

- ☐ Interfacetchnik im Aufbaugeschütz für Hutschiene (DIN 50022), Platten- oder Bodenmontage
- ☐ Interfacetchnik auf 19"-Karte für Baugruppenträger (DIN 41494)
- ☐ CD-ROM Interfacetchnik
- ☐ Miniaturrelais, Industrirelais, Zeitwürfel, Sockel
- ☐ Zeit- und Überwachungsrelais
- ☐ Ex-Schutz – Grundlagen für die Praxis (Übersichtsposter)

Feldbusstechnik

- ☐ Kompakte Feldbuskomponenten PROFIBUS-DP/DeviceNet™/Ethernet
- ☐ *piconet*® – modulares Feldbus-I/O-System in IP67
- ☐ BL67 – modulares Feldbus-I/O-System in IP67
- ☐ BL20 – modulares Feldbus-I/O-System in IP20
- ☐ Remote-I/O-System *excom*®
- ☐ Segmentkoppler
- ☐ FOUNDATION™ fieldbus-Feldbuskomponenten
- ☐ PROFIBUS-PA-Feldbuskomponenten
- ☐ Multibarriere
- ☐ Feldbusssystem *sensoplex*® 2/2Ex

Please send me more information:

Sensors

- ☐ Inductive sensors
- ☐ Inductive sensors – *uprox*®+
- ☐ Inductive sensors for rotary actuators
- ☐ Magnetic-field sensors
- ☐ Photoelectric sensors
- ☐ Machine safety equipment
- ☐ Capacitive sensors
- ☐ Ultrasonic sensors
- ☐ Flow sensors
- ☐ Pressure sensors
- ☐ Level sensors *levelprox*®
- ☐ Temperature sensors
- ☐ Identification systems
- ☐ Linear position sensors
- ☐ Rotary position sensors
- ☐ Connectors
- ☐ CD-ROM sensors

Interface technology

- ☐ Devices in modular housings for top-hat rail (DIN 50022) or panel mounting
- ☐ Devices on 19" card for DIN-rail mounting (DIN 41494)
- ☐ CD-ROM interface technology
- ☐ Miniature relays, industrial relays, time cubes, sockets
- ☐ Programmable relays and timers
- ☐ Explosion protection – basics for practical application (overview poster)

Fieldbus technology

- ☐ Compact fieldbus components PROFIBUS-DP/DeviceNet™/Ethernet
- ☐ *piconet*® – modular fieldbus I/O-system in IP67
- ☐ BL67 – modular fieldbus I/O-system in IP67
- ☐ BL20 – modular fieldbus I/O-system in IP20
- ☐ Remote I/O system *excom*®
- ☐ Segment coupler
- ☐ FOUNDATION™ fieldbus fieldbus components
- ☐ PROFIBUS-PA fieldbus components
- ☐ Multibarrier
- ☐ Fieldbus system *sensoplex*® 2/2Ex

www.turck.com



Die TURCK Produktdatenbank im World Wide Web

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TURCK's data base on the World Wide Web

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