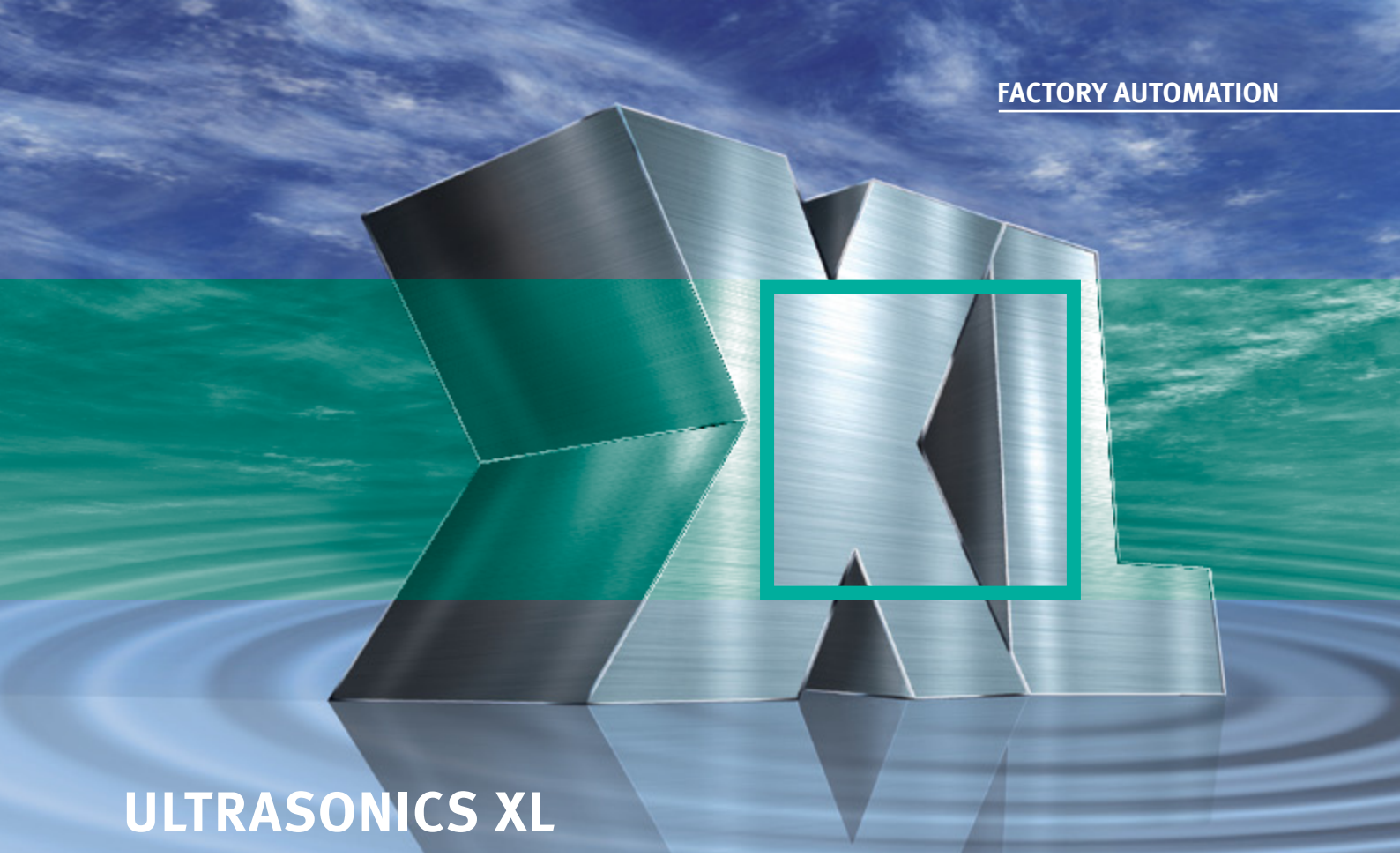


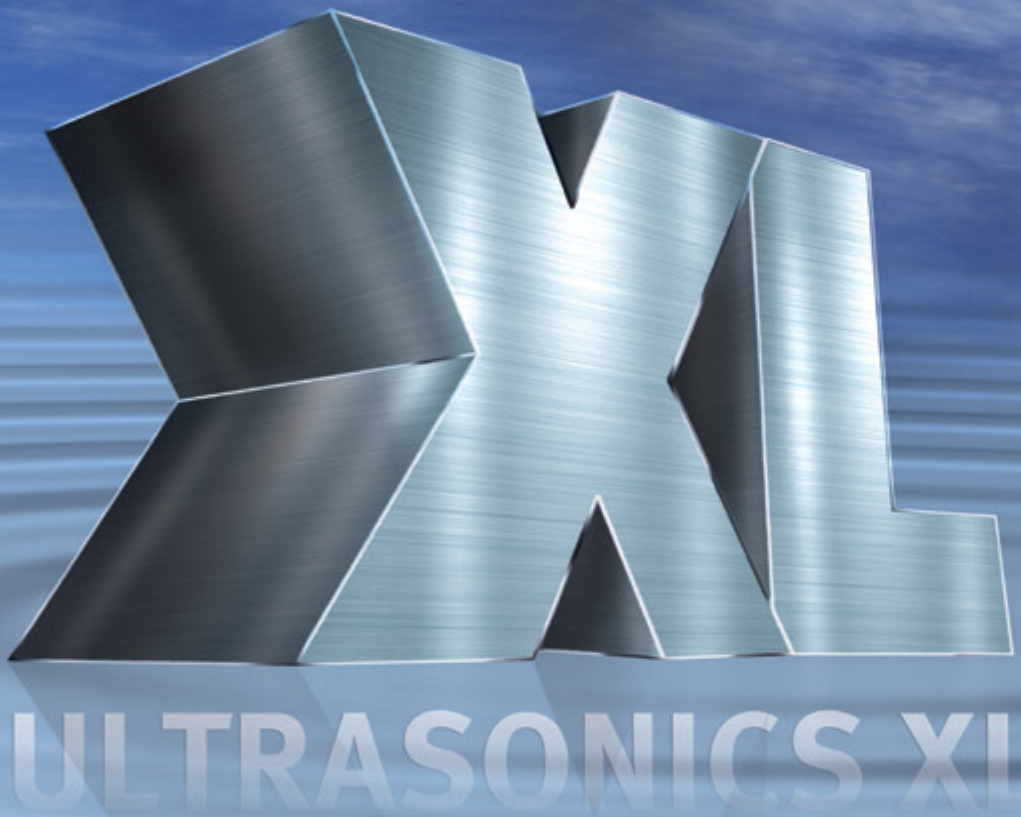
ULTRASONICS XL

PRODUCT OVERVIEW
ULTRASONIC SENSORS

PEPPERL+FUCHS
SENSING YOUR NEEDS

PEPPERL+FUCHS – YOUR EXPERT PARTNER

Ultrasonic sensors are the ideal solution for noncontact position and distance measurement in all industrial sectors where environmental influences such as dust, smoke, or steam affect the sensors. The sensors can detect objects made from a wide variety of materials with millimeter precision, regardless of shape and color. The sensor uses extremely high-frequency sonic pulses inaudible to the human ear to transmit information. The unit of measurement used to define the distance or position of the object from the sensor is the time it takes for the sound to travel between the sensor and the object. Ultrasonic sensors have proven their reliability and precision again and again, particularly in the wood and furniture industry, construction materials industry, and agricultural machinery, as well as construction machinery and applications for measuring fill levels.



Ultrasonic technology can be used for a wide range of applications. We consequently work on the solutions of tomorrow with an experienced engineering development team. We look forward to finding the right solution for you!

ULTRASONICS XL – A FULL SELECTION OF PRODUCTS FROM THE LEADER IN ULTRASONIC SENSING TECHNOLOG

- Technology XL: Ultrasonic Center of Expertise with in-house transducer development and production
- Portfolio XL: Largest ultrasonic sensor portfolio for factory automation
- Experience XL: TOP team of creative and experienced sensor specialists
- Innovation XL: unique and diverse customer solutions

FUNCTION TYPES

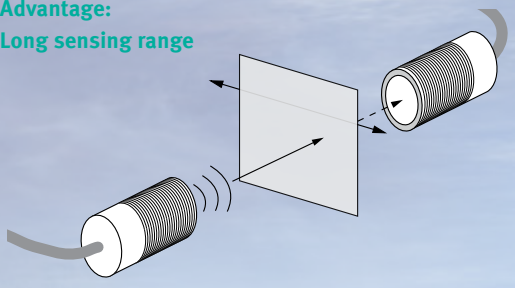
The ultrasonic sensor principle of measurement is based on the calculation of the time elapsed between sound wave transmission and reception (probe mode) or whether the transmitted signal is received or not (barrier mode).

BARRIER MODE

THRU-BEAM SENSOR

Emitter and receiver are installed facing one another. If the ultrasonic signal path is interrupted by an object, the switch output is activated.

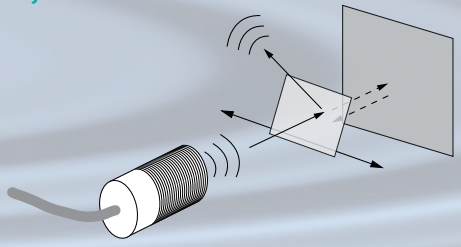
Advantage:
Long sensing range



RETROREFLECTIVE BARRIER

Emitter and receiver are located in the same housing. The ultrasound is reflected from a previously defined reflector back to the receiver.

Advantage:
Nonreflective or weakly reflected objects can still be reliably detected.

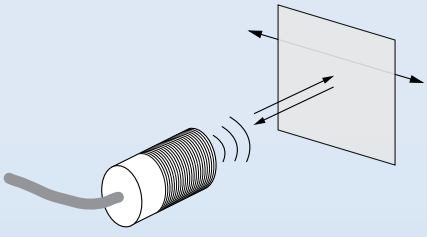


PROBE MODE

PROBE MODE

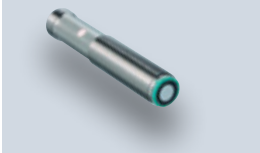
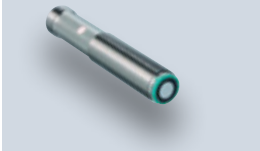
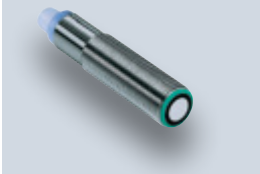
Emitter and receiver are located in the same housing. The ultrasound is reflected directly back to the receiver from the object to be detected.

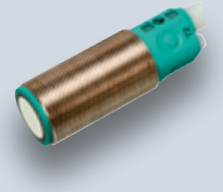
Advantage:
Simple, compact sensor, most commonly used principle.



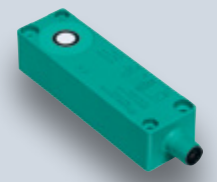
CONTENTS

CYLINDRICAL HOUSINGS

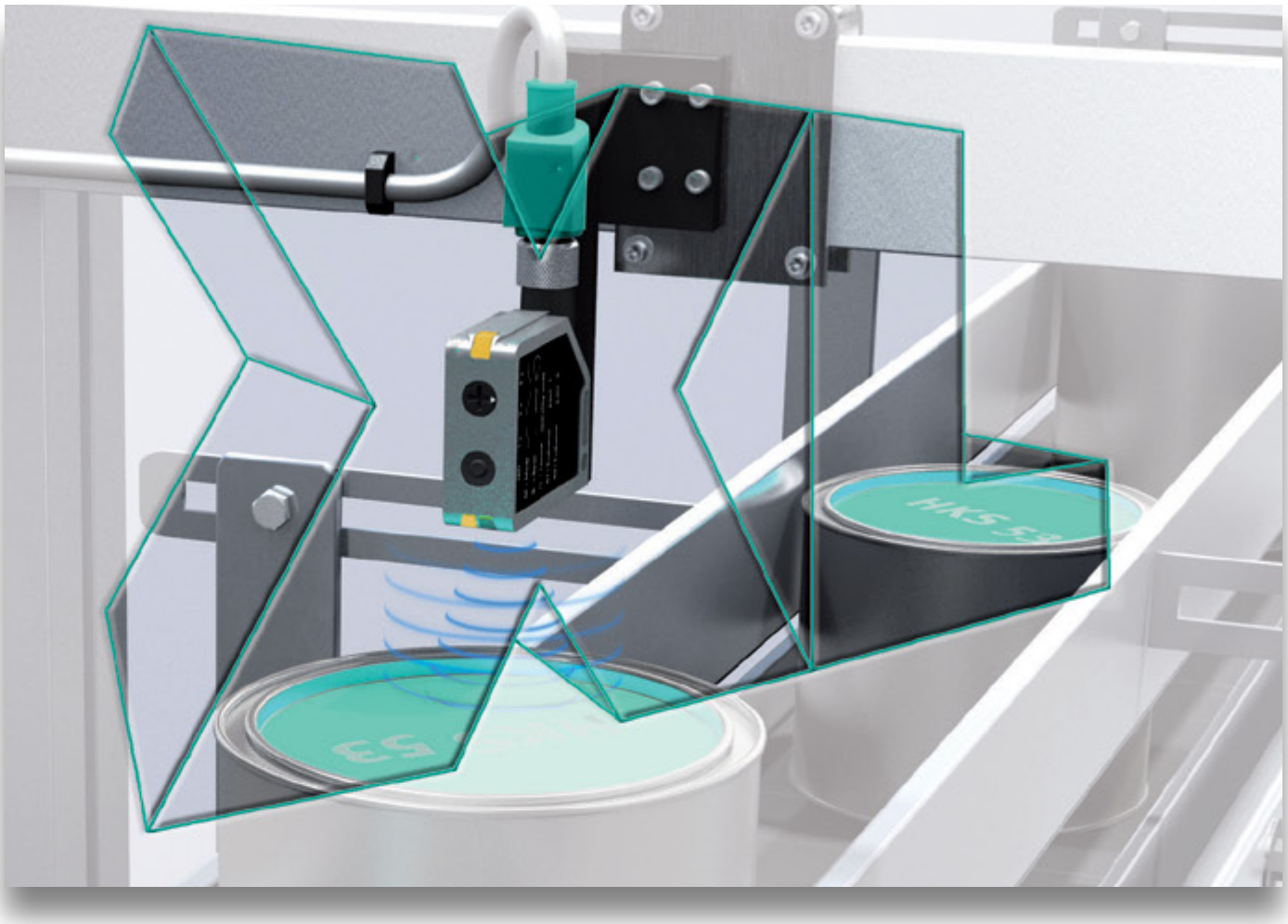
	Main features	Model number	Sensing ranges	Switching output	Analog output	Interface	Setting
UB-12GM ø 12 mm x 70 mm 	■ **Compact housing** ■ **Small blind zone** ■ **Short response time** ■ **Temperature compensation**	UB120-12GM UB200-12GM UBC250-12GM UB400-12GM	120 mm 200 mm 250 mm 400 mm	1NC/1NO	✔	–	Teach-in input
UBH-12GM ø 12 mm x 70 mm 	■ **Compact housing** ■ **Small blind zone** ■ **Short response time** ■ **Temperature compensation** ■ **Very high resolution**	UBH60/30-12GM	60 mm	1NC/1NO	✔	–	Teach-in input
18GM40 ø 18 mm x 40 mm 	■ **Compact design** ■ **Highly visible function display** ■ **Teach-in** ■ **Temperature compensation**	UB300-18GM40(A) UB800-18GM40(A) UBC400-18GH40 UBE1000-18GM40	300 mm 800 mm 400 mm 1000 mm	1NC/1NO	✔	–	Teach-in input
UB-18GM75 ø 18 mm x 75 mm 	■ **Selectable beam width** ■ **Teach-in** ■ **Synchronization option**	UB500-18GM75 UB1000-18GM75	500 mm 1000 mm	1NC/NO 2NC/NO	✔	–	Teach-in input
18GM90 ø 18 mm x 90 mm **IO-**Link 	■ **IO-Link interface for service and process data** ■ **Switching output** ■ **Temperature compensation**	UC1000-18GM90	1000 mm	1NC/NO	–	IO-Link	–

	Main features	Model number	Sensing ranges	Switching output	Analog output	Interface	Setting
UB-30GM ø 30 mm x 90/105/110 mm 	■ **Teach-in** ■ **Temperature compensation**	UB500-30GM UB2000-30GM UB4000-30GM UB6000-30GM	500 mm 2000 mm 4000 mm 6000 mm	1NC/NO	–	–	Teach-in input
UC-30GM ø 30 mm x 90/105/110 mm 	■ **Parameterization interface** ■ **Teach-in** ■ **Temperature compensation**	UC300-30GM UC500-30GM UC1000-30GM UC2000-30GM UC4000-30GM UC6000-30GM	300 mm 500 mm 1000 mm 2000 mm 4000 mm 6000 mm	2NC/NO	✔	RS232	ULTRA 3000 Teach-in connector
UC-30GM-IO ø 30 mm x 90 mm IO-Link 	■ **IO-Link** ■ **Basic parameterization using buttons** ■ **Teach-in** ■ **Temperature compensation**	UC500-30GM-…-IO UC2000-30GM-…-IO UC4000-30GM-…-IO UC6000-30GM-…-IO	500 mm 2000 mm 4000 mm 6000 mm	2NC/NO	✔	IO-Link	Button **PACT*ware*™**
UC-30GM70 ø 30 mm x 100/110/130 mm 	■ **Adjustment using potentiometer** ■ **Real-time parameterization interface** ■ **Temperature compensation**	UC500-30GM70 UC2000-30GM70 UC3500-30GM70 UC6000-30GM70	500 mm 2000 mm 3500 mm 6000 mm	2NC/NO	✔	infrared	Ultra-Prog-IR

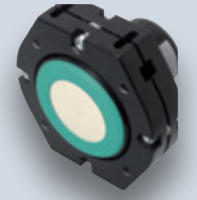
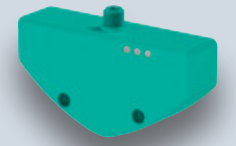
CUBE-STYLE HOUSINGS

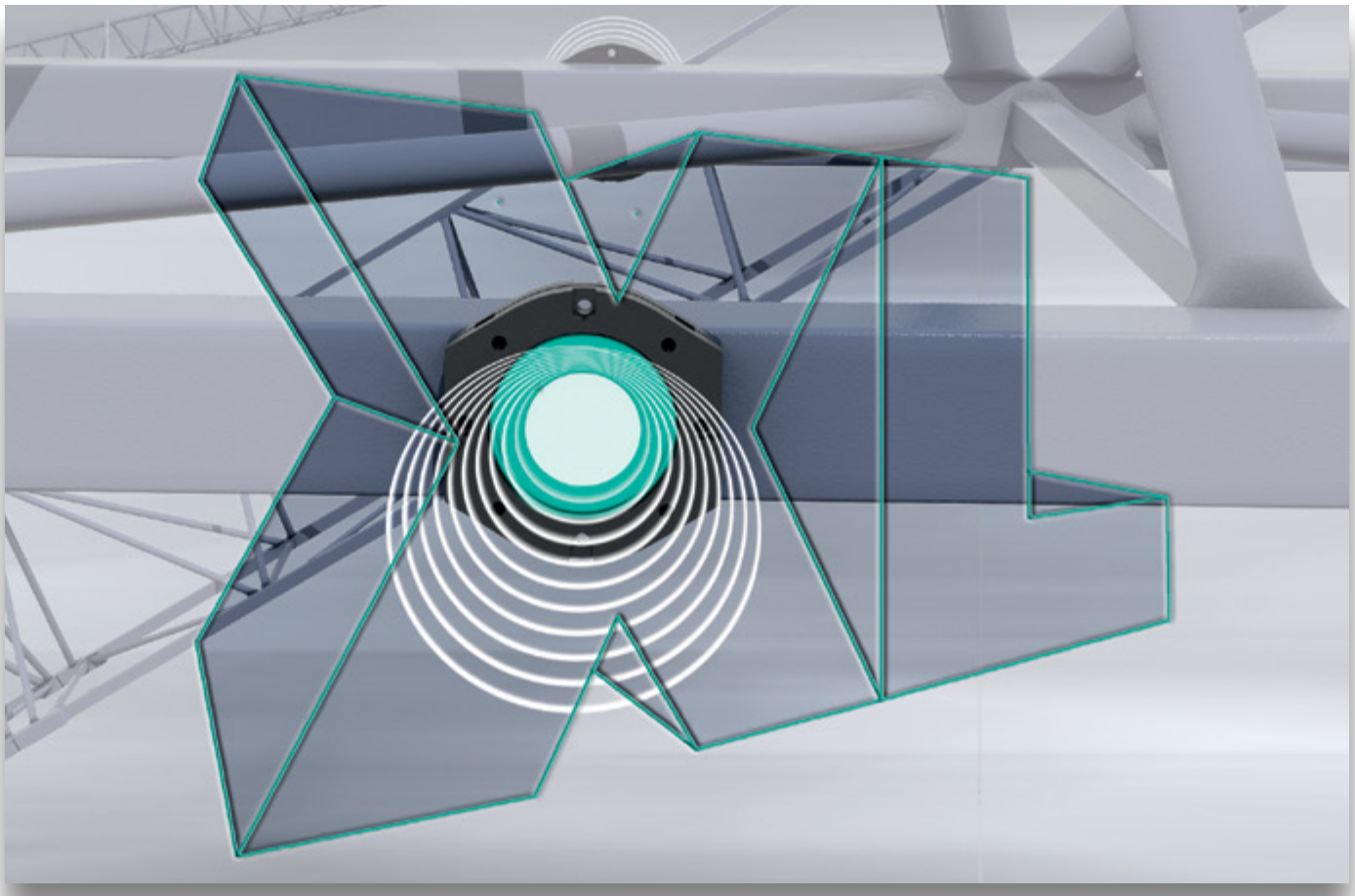
	Main features	Model number	Sensing ranges	Switching output	Analog output	Interface	Setting
F77 31 mm x 23 mm x 12 mm 	■ **Ultrasonic sensor in miniature housing** ■ **Minimal blind zone** ■ **Teach-in** ■ **Reflection, retro-reflection, thru-beam**	UB250-F77 UBR250-F77 UB400-F77 UBE800-F77	250 mm 250 mm 400 mm 800 mm	1NC/1NO	Frequency output	–	Teach-in input
F12 49 mm x 42 mm x 15 mm 	■ **Adjustable beam width** ■ **Teach-in**	UB120-F12 UB250-F12 UB800-F12	120 mm 250 mm 800 mm	1NC/NO	✔	–	Potentiometer Button
F43 145 mm x 52 mm x 30 mm 	■ **Serial interface** ■ **Relay outputs** ■ **Temperature compensation**	UC300-F43 UC2000-F43	300 mm 2000 mm	Relay	✔	RS232	ULTRA 3000
F54 120 mm x 32 mm x 25 mm 	■ **Teach-in** ■ **Temperature compensation**	UB500-F54 UB2000-F54	500 mm 2000 mm	1NC/1NO	✔	–	Teach-in input
F42 80 mm x 80 mm x 34 mm 	■ **Easy mounting** ■ **Teach-in** ■ **Relay output**	UB400-F42 UB500-F42 UB1500-F42 UB2000-F42 UB3000-F42 UB4000-F42 UB5000-F42 UB6000-F42	400 mm 500 mm 1500 mm 2000 mm 3000 mm 4000 mm 5000 mm 6000 mm	Relay 1NC/NO 2NC/NO	✔	–	Teach-in

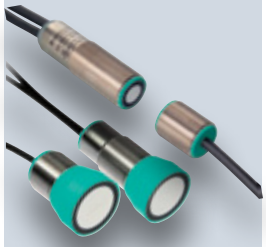
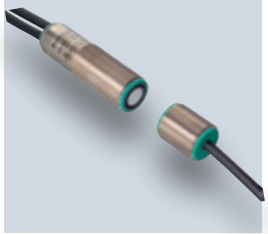
	Main features	Model number	Sensing ranges	Switching output	Analog output	Interface	Setting
VariKont 131 mm x 30 mm x 30 mm 	■ **Serial interface** ■ **Temperature compensation**	UC500-U9 UC3000-U9	500 mm 3000 mm	1NC/1NO	✔	RS232 Serial	ULTRA 3000 DIP switch
VariKont L2 40 mm x 40 mm x 67 mm 	■ **Parameterization interface** ■ **Basic parameterization using buttons** ■ **Teach-in** ■ **Temperature compensation**	UC500-L2 UC2000-L2 UC4000-L2	500 mm 2000 mm 4000 mm	1NC/1NO 2NC/NO	–	**PACT*ware*™**	Teach-in input Sensor **PACT*ware*™**

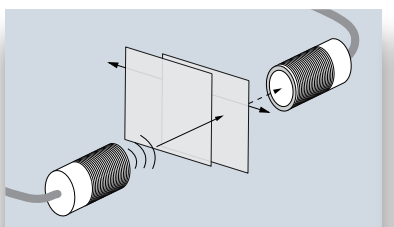


SPECIAL ULTRASONIC SENSORS

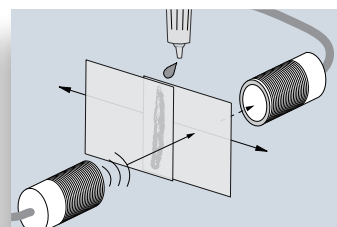
	Main features	Model number	Sensing ranges	Switching output	Analog output	Interface	Setting
F260 ø 160 mm 	■ **Robust design** ■ **Parameterization interface** ■ **10 m sensing range** ■ **Temperature compensation**	UC10000-F260	10000 mm	2NC/2NO	✔	Sonprog	Potentiometer
F65 125 mm x 46 mm/64 mm 	■ **Suitable for fill level monitoring** ■ **Parameterization interface** ■ **Temperature compensation**	UC500-F65 UC1500-F65 UC2500-F65	500 mm 1500 mm 2500 mm	2NO 1NO	✔ Frequency output	Sonprog	Teach-in input



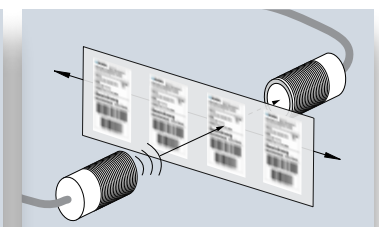
	Main features	Model number	Sensing ranges	Switching output	Analog output	Interface	Setting
UMC3000 ø 30 mm x 100 mm 	■ **Analog output** ■ **Protection class IP68/IP69K** ■ **Front of converter and housing made from VA4 stainless steel**	UMC3000	3000 mm	1NC/1NO	✔	PACT*ware*™	Teach-in input PACT*ware*™
UDC ø 18 mm / ø 30 mm 	■ **Double sheet detection** ■ **No Teach-in required** ■ **Immune to interference**	UDC-18GM400 UDC-18GMA400 UDC-18GM50 UDC-30GM	–	3NC/NO	–	–	–
UGB ø 18 mm 	■ **Adhesive strip monitoring** ■ **Compact design** ■ **Very fast processing speeds**	UGB-18GM50	–	2NO	–	–	Teach-in
ULB ø 18 mm 	■ **Label monitoring** ■ **Compact design** ■ **Very high processing speeds**	ULB-18GM50	–	2NO	–	–	Teach-in



Ultrasonic double sheet control



Ultrasonic splice monitoring

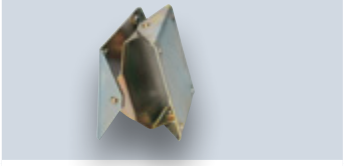


Ultrasonic label monitoring

ACCESSORIES

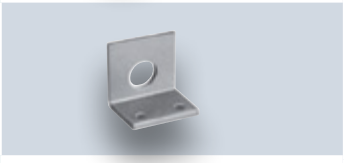
MOUNTING ACCESSORIES

- **MHW04-3505 for FP Series**

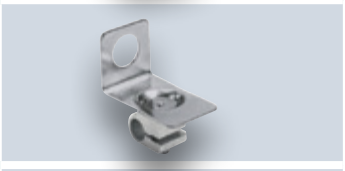


- **MH04-2681F for VariKont Series**

- **AB12, 18, 30 for all cylindrical sensors with M12, M18, and M30 housing**



- **Mounting aid OMH-4 for ø18 mm sensors**

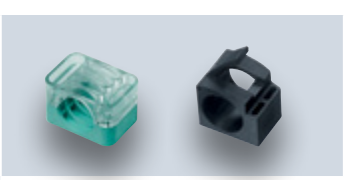


- **Mounting aid BF 5-30 for all cylindrical sensors 5 mm to 30 mm in diameter**

Visit our website and click on the heading Ultrasonic Sensor Accessories for more information on mounting accessories.

MOUNTING BRACKET

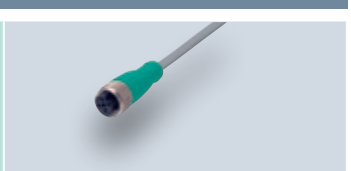
- **BF30(-F), BF18(-F), BF12(-F)**



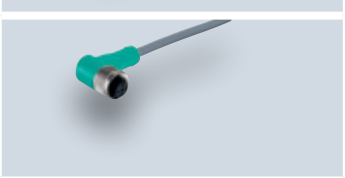
Visit our website and click on the heading Ultrasonic Sensor Accessories for more information on mounting flanges.

FEMALE CORDSETS

- **Type G, straight design**



- **Type W, angled design**



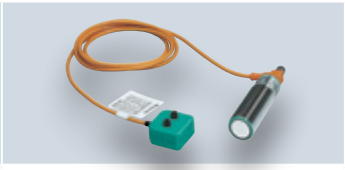
See our “Connectors and Splitters” catalog for a more extensive selection of cordsets and extension cables.

INTERFACE

- **UC-F43-R2, UC-30GM-R2, UC-FP/U9-R2, UC18/30GM-IR, 3RX400**

PROGRAMMING UNIT

- **UB-PROG2**



- **UB-PROG3**

DIGITAL DISPLAYS

- **DA5-IU-C**
  DA5-IU-2K-V
  DA5-IU-2K-C

See the “Process Displays, Pulse Control Units, Signal Converters, Rotational Speed Monitors” flyer for a larger selection of digital displays.

SOFTWARE

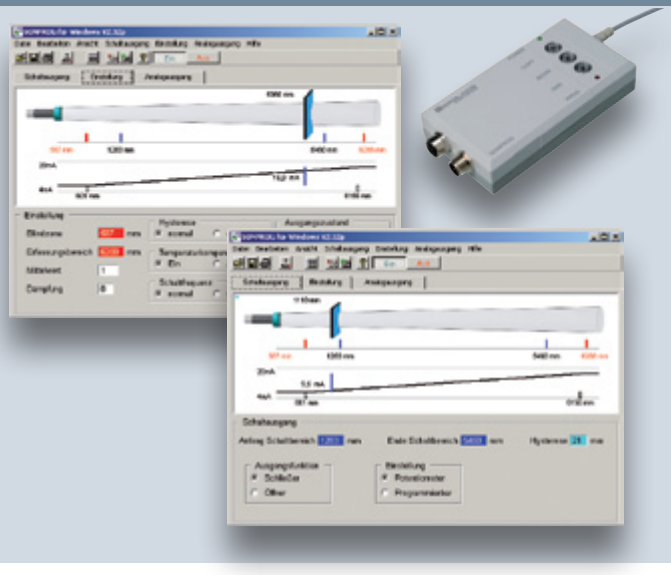
ULTRA 3000 SERVICE PROGRAM

Ultrasonic sensors with RS232 interfaces also be perfectly adapted to demanding tasks using the ULTRA 3000 service program.

ULTRA 3000 runs on any PC or laptop. Minimum operating requirements include Windows 95/98/ME/NT/2000 or XP, an EGA or VGA graphics card, and an available RS232 interface or USB interface are required if you are using the adapter USB-0.8M-PVC ABG-SUBD9.

Enter the term “ULTRA3000” in the search field on the Pepperl+Fuchs homepage to access information and download the software.

SONPROG SOFTWARE



With the 3RX4000 PC interface and the SONPROG software, you can easily adapt the F65 and F260 ultrasonic sensors to the requirements of your specific application.

Enter the term “SONPROG” in the search field on the Pepperl+Fuchs homepage to access information and download the software.

SOFTWARE PACT*ware*™

PACT*ware*™ is an open, universal operator interface used to parameterize ultrasonic sensors.

Enter the term **“PACT*ware*™”** in the search field on the Pepperl+Fuchs homepage or visit www.pactware.com to access information and download the software.

ULTRA-PROG-IR SOFTWARE

Ultrasonic sensors with infrared interface can be adapted easily to the application requirements using the PC program Ultra-Prog-IR and accompanying UC-18/30GM-IR programming adapter.

Enter the term “Ultra-Prog-IR” in the search field on the Pepperl+Fuchs homepage to access information and download the software.

FACTORY AUTOMATION – SENSING YOUR NEEDS

Pepperl+Fuchs sets the standard in quality and innovative technology for the world of automation. Our expertise, dedication, and heritage of innovation have driven us to develop the largest and most versatile line of industrial sensor technologies and interface components in the world. With our global presence, reliable service, and flexible production facilities, Pepperl+Fuchs delivers complete solutions for your automation requirements – wherever you need us.

Contact
Pepperl+Fuchs GmbH
Lilienthalstraße 200
68307 Mannheim · Germany
Tel. +49 621 776-4411 · Fax +49 621 776-27-4411
E-mail: fa-info@pepperl-fuchs.com

Worldwide Headquarters
Pepperl+Fuchs GmbH · Mannheim · Germany
E-mail: fa-info@pepperl-fuchs.com

USA Headquarters
Pepperl+Fuchs Inc. · Twinsburg, OH · USA
E-mail: fa-info@us.pepperl-fuchs.com

Asia Pacific Headquarters
Pepperl+Fuchs Pte Ltd · Singapore
Company Registration No. 199003130E
E-mail: fa-info@sg.pepperl-fuchs.com

www.pepperl-fuchs.com

PEPPERL+FUCHS
SENSING YOUR NEEDS