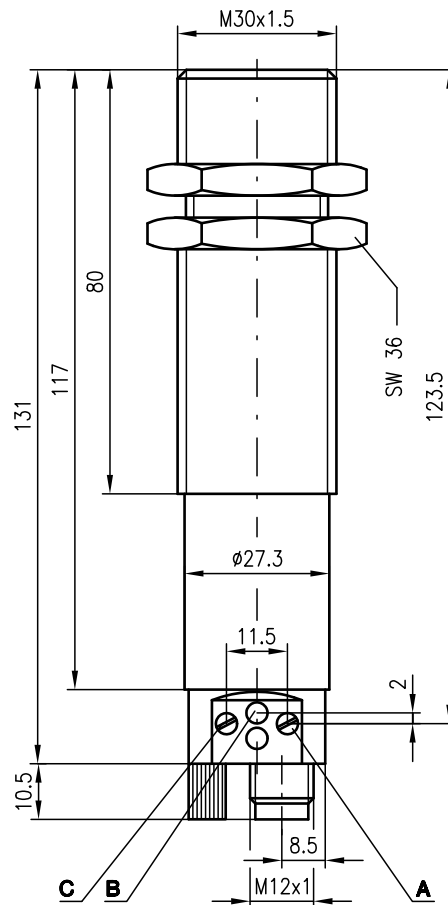


**VRTU 430**

**Ultrasonic distance sensors**



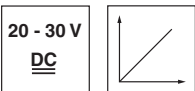
**Dimensioned drawing**



- A** Potentiometer for end of switching range Q1
- B** Indicator diode Q1
- C** Potentiometer for start of switching range Q1



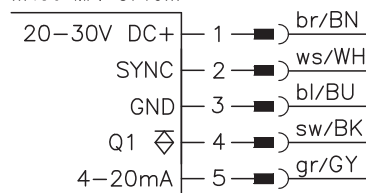
**60 ... 300 mm**  
**200 ... 1300 mm**



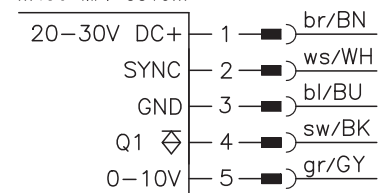
- Ideal for detection of levels of liquids, bulk materials, transparent media, ...
- Distance information largely independent of surface properties
- 1 analogue output, 1 switching output
- PC-configuration software for configuring sensor and switching output / analogue output
- Up to 10 devices can be synchronised via the SYNC input
- Separate adjustment of start and end of switching range (Q1) via potentiometer and PC

**Electrical connection**

...430 M/V 3710...  
...430 M/V 5710...



...430 M/V 3510...  
...430 M/V 5510...

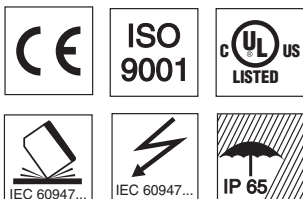


**Accessories:**

(available separately)

- Cable with M12 connector (K-D ...)
- "USDS-Config" configuration software (free download from [www.leuze.com](http://www.leuze.com))
- PGU 01 (programming unit)

We reserve the right to make changes • USDS\_03gb.fm



## Specifications

### Ultrasonic specifications

	VRTU...-5x10-300...	VRTU...-3x10-1300...
Operating range <sup>1)</sup>	60 ... 300mm	200 ... 1300mm
Ultrasonic frequency	400kHz	200kHz
Opening angle	6°	
Resolution	≤ 1mm	≥ 1mm
Absolute measurement accuracy	± 1.5% of the measurement range end value	
Reproducibility	± 0.45 mm	± 2mm
Switching hysteresis	10mm	10mm
Sensitivity	potentiometer 270°	

### Timing

Switching frequency (min.) <sup>2)</sup>	8Hz	4Hz
Response time (max.) <sup>2)</sup>	80ms	110ms
Delay before start-up	280ms	280ms

### Electrical data

Operating voltage $U_B$	20 ... 30VDC (incl. ± 10% residual ripple)
Residual ripple	± 10% of $U_B$
Bias current	≤ 50mA (without load)
Outputs	1 PNP transistor, 1 analogue output

### Switching output

Function characteristics  
Output current (PNP)  
300mA

### Current output

Output current  
Load resistor  
Characteristic curve  
only HRTU...-x710-...

### Voltage output

Output voltage  
Load resistor  
Characteristic curve  
only HRTU...-x510-...

### Indicators

Yellow LED  
Flashing yellow LED  
output activated  
programming error

### Mechanical data

Housing  
Weight  
Connection type  
metal / CuZn  
210g  
M12 connector, plastic, 5-pin

### Environmental data

Ambient temp. (operation/storage)  
Protective circuit <sup>3)</sup>  
VDE safety class  
Protection class  
Standards applied  
Fitting position  
-25°C ... +70°C/-40°C ... +85°C  
1, 2, 3  
III  
IP 65  
IEC 60947-5-2  
any

- 1) For the complete temperature range, measured object ≥ 10x10mm
- 2) Can be configured up to 3 times faster using "USDS-Config"
- 3) 1=short-circuit and overload protection, 2=no polarity reversal protection, 3=wire break and inductive protection

## Remarks

- **Approved purpose:**  
The ultrasonic distance sensors are used for acoustic, contactless detection of objects.

## Order guide

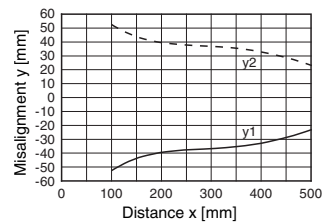
	Designation	Part No.
Current output	VRTU 430M/V-5710-300-S12	500 36266
Current output	VRTU 430M/V-3710-1300-S12	500 36267
Voltage output	VRTU 430M/V-5510-300-S12	500 40771
Voltage output	VRTU 430M/V-3510-1300-S12	500 40772

## Tables

## Diagrams

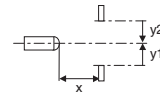
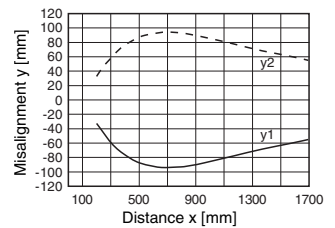
### VRTU...-5x10-300...

Typ. response behaviour (object 10x10mm)



### VRTU...-3x10-1300...

Typ. response behaviour (object 10x10mm)



## Remarks

- **Synchronisation:**  
Mutual interference is excluded by connecting the sensors with the SYNC input.

### Configuration software "USDS-Config"

The configuration software runs under Windows 95/98/NT/2000/XP and offers the following features:

- Configuration of multiplex operation
- Configuration of the sensor (attenuation, switching frequency, response time)
- Adjustment of the switching output (start/end of switching range, hysteresis, object present yes/no)
- Adjustment of the analogue output
- Support of various languages