HRTU 418 — Ultrasonic distance sensors

50 … 300 mm
150 … 1000 mm

20 - 30 V DC

- Ideal for detection of levels of liquids, bulk materials, transparent media, …
- Distance information largely independent of surface properties
- PC-configuration software for configuring sensor and analogue output
- Up to 10 devices can be synchronised via the SYNC input

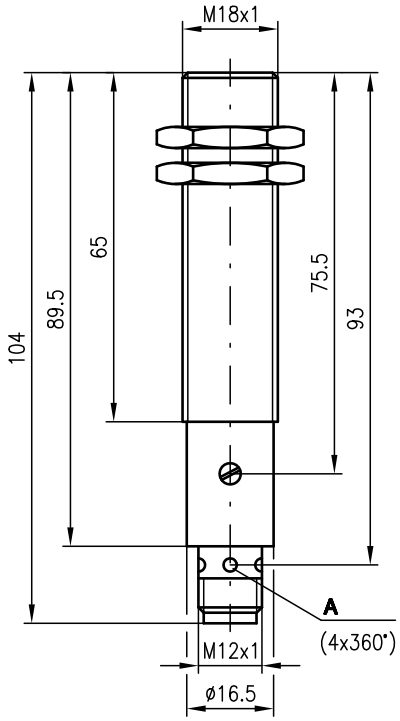
IEC 60947... IEC 60947... IP 67

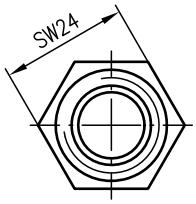
Accessories:

(available separately)

- Mounting systems
- Cable with M12 connector (K-D …)
- "USDS-Config" configuration software (free download from *www.leuze.com*)
- PGU 01 (programming unit)

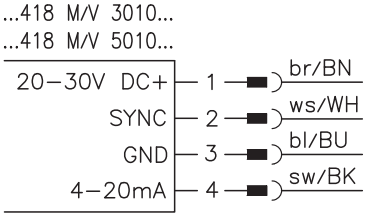
Dimensioned drawing

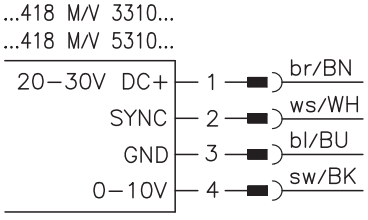




A Indicator diodes Q1

Electrical connection





We reserve the right to make changes • USDS_02gb.fm

Specifications

	HRTU…-5x10-300…	HRTU…-3x10-1000…
Ultrasonic specifications		
Operating range [1]	50 … 300mm	150 … 1000mm
Ultrasonic frequency	400kHz	200kHz
Opening angle	6°	
Resolution	1mm	
Absolute measurement accuracy	± 2.5% of the measurement range end value	
Reproducibility	± 1mm	± 2mm
Switching hysteresis	10mm	10mm
Timing		
Switching frequency (min.) [2]	5Hz	4Hz
Response time (max.) [2]	100ms	120ms
Delay before start-up	280ms	280ms
Electrical data		
Operating voltage U_B	20 … 30V DC (incl. ± 10% residual ripple)	
Residual ripple	± 10% of U_B	
Bias current	≤ 60mA	
Switching output	analogue	
Current output	**only HRTU…-x010-…**	
Output current	4 … 20mA	
Load resistor	R_L = 0 … 300Ω	
Characteristic curve	ascending	
Voltage output	**only HRTU…-x310-…**	
Output voltage	0 … 10V	
Load resistor	R_L ≥ 500Ω	
Characteristic curve	ascending	
Indicators		
Yellow LED	object detected	
Mechanical data		
Housing	metal / CuZn	
Weight	50g	
Connection type	M12 connector, plastic, 4-pin	
Environmental data		
Ambient temp. (operation/storage)	-25°C … +70°C/-40°C … +85°C	
Protective circuit [3]	1, 2, 3	
VDE safety class	III	
Protection class	IP 67	
Standards applied	IEC 60947-5-2	
Fitting position	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

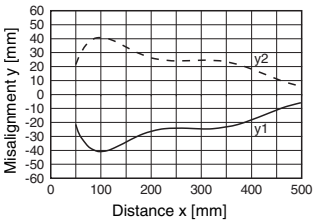
	Designation	Part No.
Current output	HRTU 418M/V-5010-300-S12	500 36259
Current output	HRTU 418M/V-3010-1000-S12	500 36260
Voltage output	HRTU 418M/V-5310-300-S12	500 40616
Voltage output	HRTU 418M/V-3310-1000-S12	500 40618

Tables

Diagrams

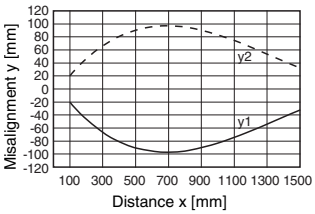
HRTU…-5x10-300…

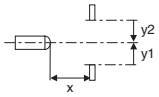
Typ. response behaviour (object 10x10mm)



HRTU…-3x10-1000…

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