

**Product Information**

# Ultrasonic Sensor Series LS20



- Measuring ranges from 30..8000 mm
- Switching- and analogue outputs
- Teach-In function
- Foreground fade-out
- Operating temperature -25..70 °C
- Protection class IP67

**Characteristics**

The LS20 measures the distance to an object within the detection zone contact less. Depending on the adjusted detect distance the switched output is set. LS sensors have internal temperature compensation. Because the sensors heat up on their own, the temperature compensation reaches its optimum working point after approximately 30 minutes of operation. The sensors indicate a blind zone, in which the distance cannot be measured. The operating range indicates the distance of the sensor that can be applied with normal reflectors with sufficient function reserve.

**Technical data**

**Power supply**

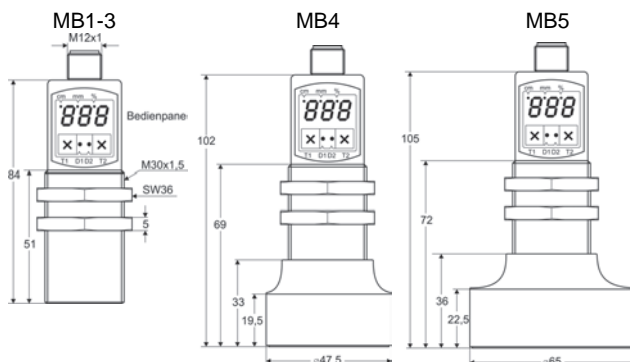
Supply voltage  $U_B$  : 9..30 V DC, reverse polarity protection  
 Voltage ripple :  $\pm 10\%$   
 No-load supply current :  $\leq 80$  mA  
 Operating temperature : -25..70 °C  
 CE-conformity : EN60947-5-2

Detecting zones	MB1	MB2	MB3	MB4	MB5
Min. range [mm]	30	60	200	350	600
Optimal range [mm]	250	350	1300	3400	6000
Max. range [mm]	350	600	2000	5000	8000
Ultrasonic frequency [Hz]	320	400	200	120	80
Solution, sampling rate [mm]	0.18	0.18	0.18	0.18	0.18

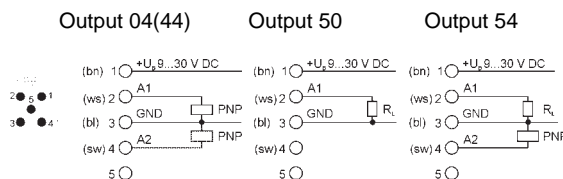
**Display** : LED red, 7,6 mm  
 Indicating range : 0..999 Digit  
 LED's : output indicators, 3-colors  
**Output**  
 Switched output PNP :  $U_S=U_B-2$  V;  $I_{max}$  200 mA, short circuit proof, NO or NC programmable  
 -Switching hysteresis : programmable  
 -Switching frequency : max. 11 Hz  
 -Response time : min. 50 ms  
 -Start-up delay :  $< 300$  ms  
 Current output : 4..20 mA,  $R_L \leq 100 \Omega$  at 9 V  $\leq U_B \leq 20$  V  
 $R_L \leq 500 \Omega$  at  $U_B > 20$  V

Voltage output : 0..10 V  $R_L \geq 100$  k $\Omega$  at  $U_B > 15$  V  
**Case** : brass sleeve, nickel-plated;  
 Plastic parts : PBT, TPU;  
 Ultrasonic transducer : Polyurethane foam  
 Epoxy resin with glass content  
 Weight : 150..270 g  
 Connection : 5-pole plug M12, PBT  
 Protection class : IP67

**Dimensions**



**Connection diagram**



**Ordering code**

LS20 - 1. - 2. - 3.

1. Ranges [mm] min..optimal/maximal detecting zones	
1	30..250/350
2	60..350/600
3	200..1300/2000
4	350..3400/5000
5	600..6000/8000
2. Output	
04	1 PNP-switching output
44	2 PNP-switching outputs
50	1 analogue output 4..20 mA/0..10 V DC
54	1 analogue output, 1 PNP-switching output
3. Options	
00	without option
VA	case stainless steel 1.4571
Accessory connection cable	
SKM5E-02	2 m
SKM5E-02VA	2 m, plug material stainless steel
SKM5E-05	5 m
SKM5E-05VA	5 m, plug material stainless steel