

### Model Number

**UBE15M-H1**

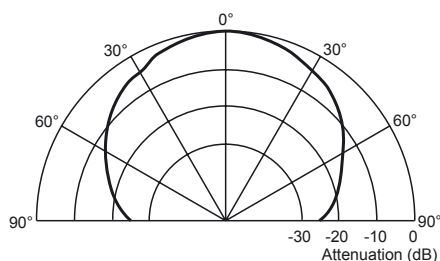
Multi-head system

### Features

- Large sensing range
- Large possible lateral distance between emitter and receiver
- One or two transducers connectable
- Separate evaluation

### Curves

#### Direction characteristics



### Technical data

#### General specifications

Sensing range	0 ... 15000 mm , emitter - receiver synchronised
Transducer frequency	approx. 40 kHz
Angle of divergence	$\pm 45^\circ$ at -6 dB
Temperature drift of echo propagation delay	0.2 %/K

#### Electrical specifications

Operating voltage $U_B$	16 ... 30 V DC , ripple 10 % <sub>SS</sub> 8 V DC at less transmitting power
No-load supply current $I_0$	$\leq 10$ mA (typ. 6 mA at $U_B = 24$ V DC)

#### Input

Input type	1 pulse input for transmitter pulse, activation through open collector npn < 1.5 V: emitter active, > 3.5 V: emitter inactive
Pulse length	100 $\mu$ s ... 10 ms
Pause length	$\geq 50 \times$ pulse length

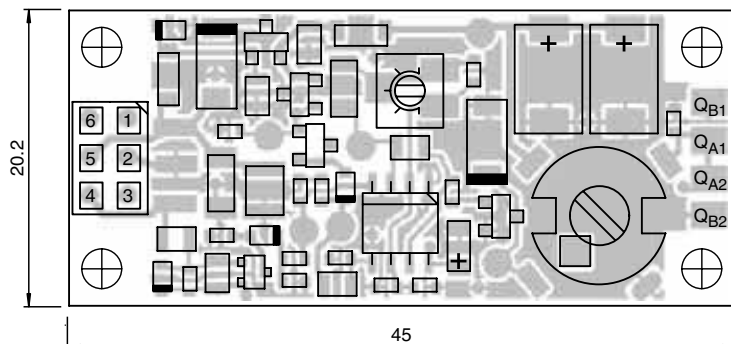
#### Ambient conditions

Ambient temperature	0 ... 50 °C (273 ... 323 K)
Storage temperature	-40 ... 85 °C (233 ... 358 K)

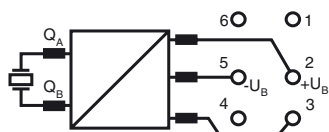
#### Mechanical specifications

Protection degree	IP00
Connection	Contact plugs and soldering surfaces
Mass	20 g
Dimensions	Printed circuit board: 45 mm x 20.2 mm (5 mm separable: 40 mm x 20.2 mm) overall height: 10 mm

## Dimensions



## Electrical Connection



## Function

The emitter is part of a complete system consisting of emitter, receiver and controller

Receiver: UBE15M-F54-H2-V1

Controller: UH3-16E4A-K15-R3

By means of using 2 ultrasonic transducers, aligned to different directions (practically 90° angular difference), the detection range and the angular tolerance can be increased anymore.

Caution:

When aligning both ultrasonic transducers in a parallel way, mutual interference effects can occur. This can cause local amplification respective attenuation of the ultrasonic sound strength.



Example of a customized solution with 2 ultrasonic transducers

In real operation, the transmitter and receiver will not be not aligned to each other. This will reduce the detection range.

The characteristic response curve to the side illustrates

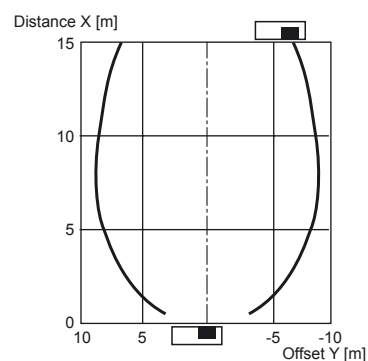
examples of the detection range of the system under the following operating conditions.

- The transmitter and receiver are arranged so they lie parallel opposite each other. The graph shows the detection range as a function of lateral offset.
- The receiver is arranged vertically downwards, while the emitter is arranged in the direction of the receiver. The graph shows the detection range as a function of the angle of incidence.

This makes it possible to evaluate the detection range of the system as a function of the positioning of

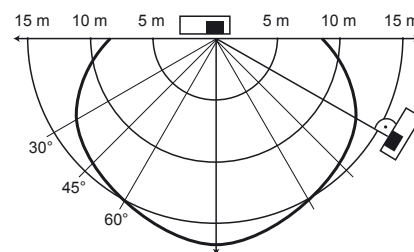
## Additional Information

### Characteristic response curve



Permissible distance (offset) between the optical axis of the emitter and receiver.

### Characteristic response curve





the transmitter and receiver for conditions that will occur in practical usage.



***Cable sockets with built-in indicator LEDs must not be used to connect this device!***