wms

The wms sensors are designed for use in microprocessor controllers with signal evaluation performed by customers.

HIGHLIGHTS

› Trigger input › for control of the ultrasonic transmitter

› Echo output › for customer-provided evaluation in the controller

BASICS

› 1 echo output › with a load up to 10 mA

› 5 detection ranges with a measurement range of 30 mm to 8 m

› 0.36 mm resolution

› 9–30 V operating voltage

The wms sensors

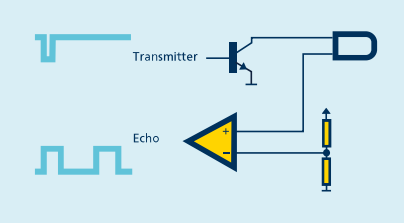
require a connection to the customer's own control and signal evaluation equipment.

wms – the inexpensive alternative

to a self-contained sensor when the sensor must be controlled by the customer's system. A microprocessor control is normally required for this.

The "transmitter" signal input

briefly has to be set to $-U_B$ by the control unit via an open-collector circuit. As a result, the wms sensor emits a sound pulse for the time of this signal.



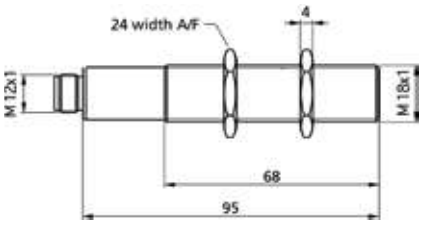
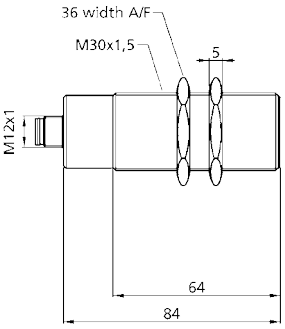
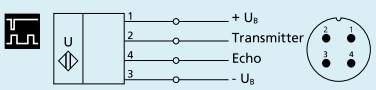
Triggering a wms sensor from the customer's control system

The "echo" signal output

subsequently transmits all echo signals received depending on their duration as 1 bit values (echo yes/no). This takes between 8 and 65 ms depending on the type of sensor. The positive-switched (pnp) output can be loaded with 10 mA. The computation of the distance and subsequent processing is carried out in the customer's control system.

Our project engineers

will be happy to assist you in integrating a wms sensor into your control system.

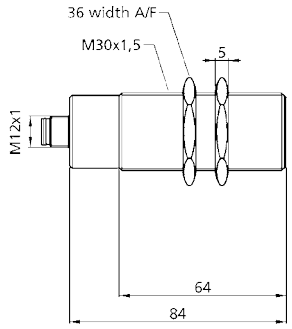
	wms-25	wms-35
	0.25 m	0.35 m
measuring range	**30 – 350 mm**	**65 – 600 mm**
		
blind zone	30 mm (40 mm[1])	65 mm (70 mm[1])
operating range	250 mm	350 mm
maximum range	350 mm	600 mm
angle of beam spread	please see ⓘ	please see ⓘ
transducer frequency	320 kHz	400 kHz
resolution/sampling rate	0.35 mm	0.18 mm
reproducibility	± 0.15 %	± 0.15 %
accuracy	temperature drift 0.17 %/K	temperature drift 0.17 %/K
operating voltage U_B	10 V to 30 V DC, reverse polarity protection	9 V to 30 V DC, reverse polarity protection
voltage ripple	± 10 %	± 10 %
no-load current consumption	≤ 30 mA	≤ 30 mA
housing	brass sleeve, nickel-plated	brass sleeve, nickel-plated
	plastic parts: PBT	plastic parts: PBT
	ultrasonic transducer: polyurethane foam,	ultrasonic transducer: polyurethane foam,
	epoxy resin with glass content	epoxy resin with glass content
class of protection according to EN 60529	IP 65	IP 65
type of connection	4-pin M12 initiator plug	4-pin M12 initiator plug
	material: PBT	material: PBT
operating temperature	-25°C to +70°C	-25°C to +70°C
storage temperature	-40°C to +85°C	-40°C to +85°C
weight	70 g	150 g
signal input (transmitter)	controlled by open collector (npn),	controlled by open collector (npn),
	$I_C \geq 3$ mA, $U_{CE} \geq 30$ V	$I_C \geq 3$ mA, $U_{CE} \geq 30$ V
recommended transmitted pulse length	25 µs	80 µs
recommended measuring cycle time	8 ms	12 ms
signal output (echo)	positive switching (pnp) $I_{max} = 10$ mA,	positive switching (pnp) $I_{max} = 10$ mA,
	short-circuit-proof and reverse polarity protection	short-circuit-proof and reverse polarity protection
delay prior to availability	< 300 ms	< 1.5 s
order number	**wms-25/RT/HV/M18**	**wms-35/RT**
		
	transmitter input + echo output	transmitter input + echo output

[1] Cable lengths > 5 m

wms-130

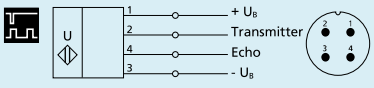
1.3 m

200–2,000 mm



200 mm
1,300 mm
2,000 mm
please see ⓘ
200 kHz
0.18 mm
± 0.15 %
temperature drift 0.17 %/K
9 V to 30 V DC, reverse polarity protection
± 10 %
≤ 30 mA
brass sleeve, nickel-plated
plastic parts: PBT
ultrasonic transducer: polyurethane foam,
epoxy resin with glass content
IP 65
4-pin M12 initiator plug
material: PBT
-25°C to +70°C
-40°C to +85°C
150 g
controlled by open collector (npn),
$I_C \geq 3$ mA, $U_{CE} \geq 30$ V
150 µs
20 ms
positive switching (pnp) I_{max} = 10 mA,
short-circuit-proof and reverse polarity protection
< 1.5 s

wms-130/RT

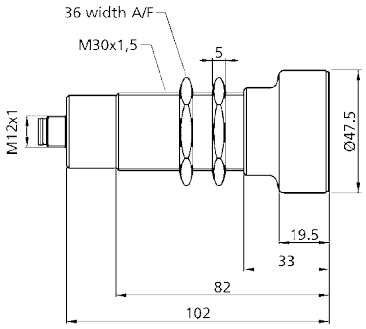


transmitter input + echo output

wms-340

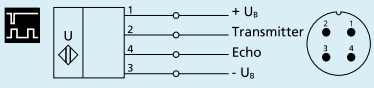
3.4 m

350–5,000 mm



350 mm
3,400 mm
5,000 mm
please see ⓘ
120 kHz
0.18 mm
± 0.15 %
temperature drift 0.17 %/K
9 V to 30 V DC, reverse polarity protection
± 10 %
≤ 30 mA
brass sleeve, nickel-plated
plastic parts: PBT
ultrasonic transducer: polyurethane foam,
epoxy resin with glass content
IP 65
4-pin M12 initiator plug
material: PBT
-25°C to +70°C
-40°C to +85°C
210 g
controlled by open collector (npn),
$I_C \geq 3$ mA, $U_{CE} \geq 30$ V
300 µs
40 ms
positive switching (pnp) I_{max} = 10 mA,
short-circuit-proof and reverse polarity protection
< 1.5 s

wms-340/RT

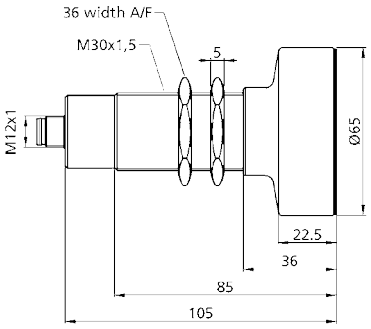


transmitter input + echo output

wms-600

6.0 m

800–8,000 mm



800 mm
6,000 mm
8,000 mm
please see ⓘ
80 kHz
0.18 mm
± 0.15 %
temperature drift 0.17 %/K
9 V to 30 V DC, reverse polarity protection
± 10 %
≤ 30 mA
brass sleeve, nickel-plated
plastic parts: PBT
ultrasonic transducer: polyurethane foam,
epoxy resin with glass content
IP 65
4-pin M12 initiator plug
material: PBT
-25°C to +70°C
-40°C to +85°C
270 g
controlled by open collector (npn),
$I_C \geq 3$ mA, $U_{CE} \geq 30$ V
350 µs
65 ms
positive switching (pnp) I_{max} = 10 mA,
short-circuit-proof and reverse polarity protection
< 1.5 s

wms-600/RT

transmitter input + echo output