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Extract from our online catalogue:

wms ultrasonic sensors

Current to: 2021-12-16



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

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
- › 10–30 V operating voltage

Description

The wms sensors

require 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

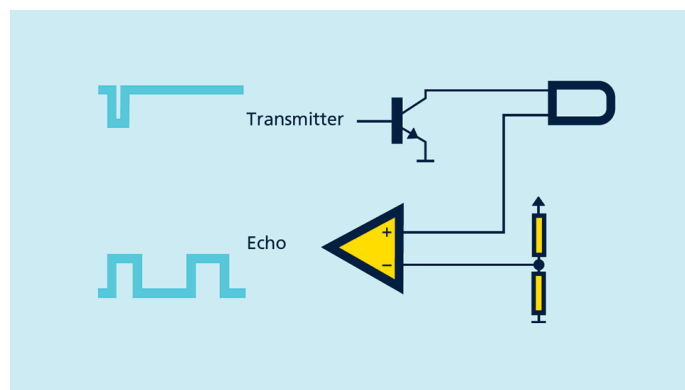
briefly has to be set to $-U_B$ by the control unit via an open-collector circuit. As a result, an the wms sensor emits a sound pulse for the time of this signal.

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

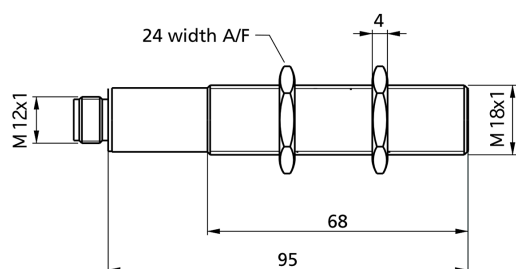
will be happy to assist you in integrating a wms sensor into your control system.



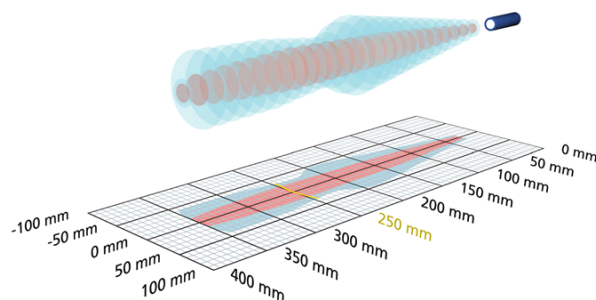
Triggering a wms sensor from the customer's control system

wms-25/RT/HV/M18

scale drawing



detection zone



echo output



measuring range

30 - 350 mm

design

cylindrical M18

operating mode

sensor for evaluators

ultrasonic-specific

means of measurement

echo propagation time measurement

transducer frequency

320 kHz

blind zone

30 mm

operating range

250 mm

maximum range

350 mm

reproducibility

$\pm 0.15\%$

accuracy

temperature drift 0.17 %/K

electrical data

operating voltage U_B

10 - 30 V d.c., reverse polarity protection

voltage ripple

$\pm 10\%$

no-load current consumption

≤ 30 mA

type of connection

4-pin M12 initiator plug

wms-25/RT/HV/M18

outputs

output 1	signal output echo pnp: $I_{max} = 10 \text{ mA}$ (signal output echo)
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inputs

recommended transmitted pulse length	25 μs
recommended measuring cycle time	8 ms
description	controlled by open collector (npn), $I_C \geq 3 \text{ mA}$, $U_{CE} \geq 30 \text{ V}$
input 1	signal input - transmitter

housing

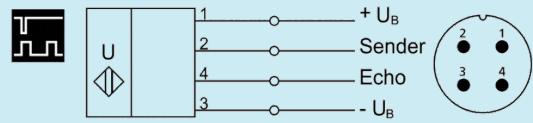
material	brass sleeve, nickel-plated, plastic parts, PBT
ultrasonic transducer	polyurethane foam, epoxy resin with glass contents
class of protection to EN 60529	IP 65
operating temperature	-20°C to +70°C
storage temperature	-40°C to +85°C
weight	80 g
further versions	stainless steel
further versions	wms-25/RT/HV/M18E

technical features/characteristics

temperature compensation	durch Ultraschall-Referenzmessung
controls	no
scope for settings	no
Synchronisation	yes
multiplex	yes
indicators	no

wms-25/RT/HV/M18

pin assignment



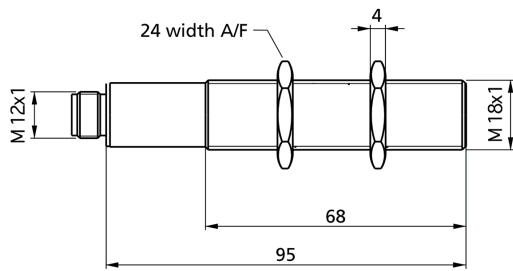
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wms-25/RT/HV/M18

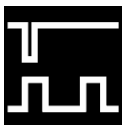
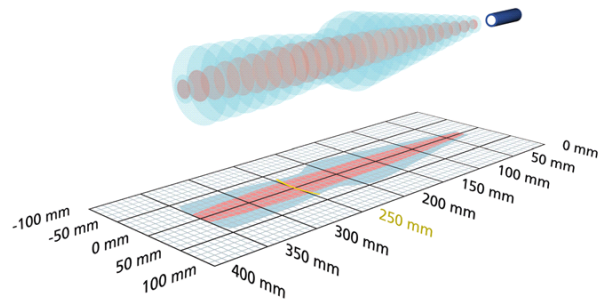
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wms-25/RT/HV/M18E

scale drawing



detection zone



echo output



350 mm

measuring range	30 - 350 mm
design	cylindrical M18
operating mode	sensor for evaluators
particularities	stainless steel version

ultrasonic-specific

means of measurement	echo propagation time measurement
transducer frequency	320 kHz
blind zone	30 mm
operating range	250 mm
maximum range	350 mm
reproducibility	$\pm 0.15 \%$
accuracy	temperature drift 0.17 %/K

electrical data

operating voltage U_b	10 - 30 V d.c., reverse polarity protection
voltage ripple	$\pm 10 \%$
no-load current consumption	$\leq 30 \text{ mA}$
type of connection	4-pin M12 initiator plug

wms-25/RT/HV/M18E

outputs

output 1	signal output echo pnp: $I_{\max} = 10 \text{ mA}$ (signal output echo)
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inputs

recommended transmitted pulse length	25 μs
recommended measuring cycle time	8 ms
description	controlled by open collector (npn), $I_C \geq 3 \text{ mA}$, $U_{CE} \geq 30 \text{ V}$
input 1	signal input - transmitter

housing

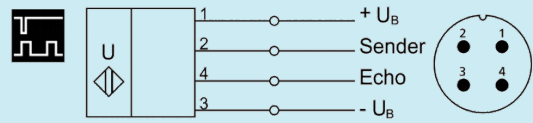
material	stainless steel, plastic parts, PBT
ultrasonic transducer	polyurethane foam, epoxy resin with glass contents
max. tightening torque of nuts	15 Nm
class of protection to EN 60529	IP 65
operating temperature	-20°C to +70°C
storage temperature	-40°C to +85°C
weight	80 g
further versions	wms-25/RT/HV/M18

technical features/characteristics

temperature compensation	durch Ultraschall-Referenzmessung
controls	no
scope for settings	no
Synchronisation	yes
multiplex	yes
indicators	no
particularities	stainless steel version

wms-25/RT/HV/M18E

pin assignment



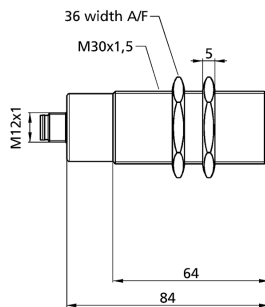
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wms-25/RT/HV/M18E

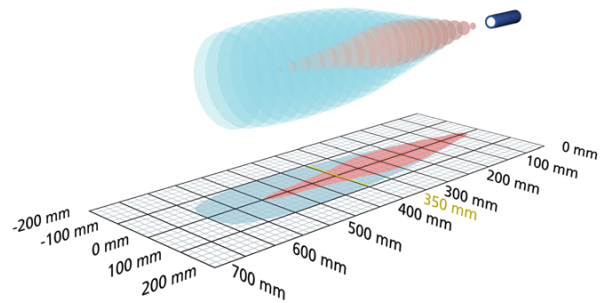
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wms-35/RT

scale drawing



detection zone



echo output



600 mm

measuring range	65 - 600 mm
design	cylindrical M30
operating mode	sensor for evaluators

ultrasonic-specific

means of measurement	echo propagation time measurement
transducer frequency	400 kHz
blind zone	65 mm
operating range	350 mm
maximum range	600 mm
reproducibility	$\pm 0.15 \%$
accuracy	temperature drift 0.17 %/K

electrical data

operating voltage U_B	10 - 30 V d.c., reverse polarity protection
voltage ripple	$\pm 10 \%$
no-load current consumption	$\leq 30 \text{ mA}$
type of connection	4-pin M12 initiator plug

wms-35/RT

outputs

output 1	signal output echo pnp: $I_{max} = 10 \text{ mA}$ (signal output echo)
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inputs

recommended transmitted pulse length	80 μs
recommended measuring cycle time	12 ms
description	controlled by open collector (npn), $I_C \geq 3 \text{ mA}$, $U_{CE} \geq 30 \text{ V}$
input 1	signal input - transmitter

housing

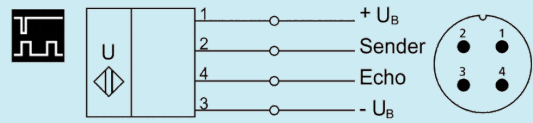
material	brass sleeve, nickel-plated, plastic parts, PBT
ultrasonic transducer	polyurethane foam, epoxy resin with glass contents
class of protection to EN 60529	IP 65
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	200 g
further versions	stainless steel high chemical resistance cable connection (on request)

technical features/characteristics

controls	no
scope for settings	no
Synchronisation	yes
multiplex	yes
indicators	no

wms-35/RT

pin assignment



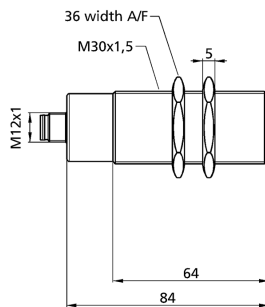
order no.

wms-35/RT

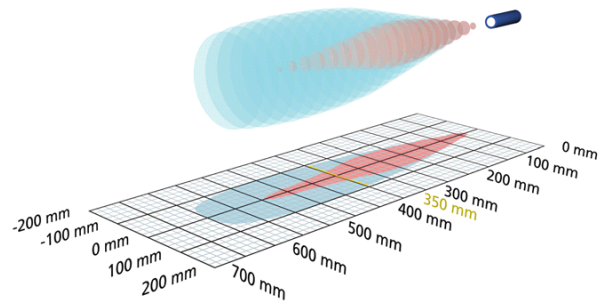
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wms-35/SI/RT

scale drawing



detection zone



echo output



600 mm

measuring range	65 - 600 mm
design	cylindrical M30
operating mode	sensor for evaluators
particularities	high chemical resistance

ultrasonic-specific

means of measurement	echo propagation time measurement
transducer frequency	400 kHz
blind zone	65 mm
operating range	350 mm
maximum range	600 mm
reproducibility	$\pm 0.15 \%$
accuracy	temperature drift 0.17 %/K

electrical data

operating voltage U_b	9 - 30 V d.c., reverse polarity protection
voltage ripple	$\pm 10 \%$
no-load current consumption	$\leq 30 \text{ mA}$
type of connection	4-pin M12 initiator plug

wms-35/SI/RT

outputs

output 1	signal output echo pnp: $I_{\max} = 10 \text{ mA}$ (signal output echo)
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inputs

recommended transmitted pulse length	80 μs
recommended measuring cycle time	12 ms
description	controlled by open collector (npn), $I_C \geq 3 \text{ mA}$, $U_{CE} \geq 30 \text{ V}$
input 1	signal input - transmitter

housing

material	brass sleeve, nickel-plated, plastic parts, PBT
ultrasonic transducer	polyurethane foam, epoxy resin with glass contents
class of protection to EN 60529	IP 65
operating temperature	-20°C to +70°C
storage temperature	-40°C to +85°C
weight	200 g

technical features/characteristics

controls	no
scope for settings	no
Synchronisation	yes
multiplex	yes
indicators	no
particularities	high chemical resistance

pin assignment



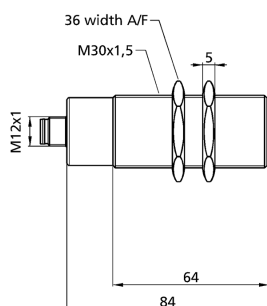
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wms-35/SI/RT

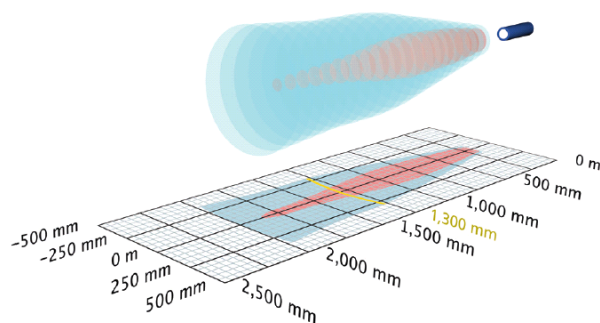
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wms-130/RT

scale drawing



detection zone



echo output



measuring range

200 - 2.000 mm

design

cylindrical M30

operating mode

sensor for evaluators

ultrasonic-specific

means of measurement

echo propagation time measurement

transducer frequency

200 kHz

blind zone

200 mm

operating range

1,300 mm

maximum range

2,000 mm

reproducibility

$\pm 0.15\%$

accuracy

temperature drift 0.17 %/K

electrical data

operating voltage U_B

10 - 30 V d.c., reverse polarity protection

voltage ripple

$\pm 10\%$

no-load current consumption

≤ 30 mA

type of connection

4-pin M12 initiator plug

wms-130/RT

outputs

output 1	signal output echo pnp: $I_{max} = 10 \text{ mA}$ (signal output echo)
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inputs

recommended transmitted pulse length	150 μs
recommended measuring cycle time	20 ms
description	controlled by open collector (npn), $I_C \geq 3 \text{ mA}$, $U_{CE} \geq 30 \text{ V}$
input 1	signal input - transmitter

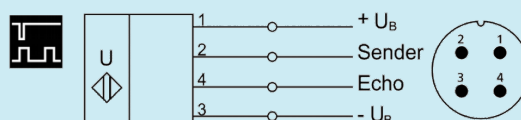
housing

material	brass sleeve, nickel-plated, plastic parts, PBT
ultrasonic transducer	polyurethane foam, epoxy resin with glass contents
class of protection to EN 60529	IP 65
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	200 g
further versions	stainless steel cable connection (on request)

technical features/characteristics

controls	no
scope for settings	no
Synchronisation	yes
multiplex	yes
indicators	no

pin assignment



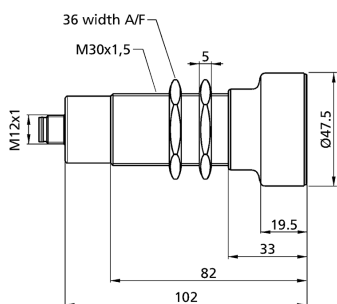
order no.

wms-130/RT

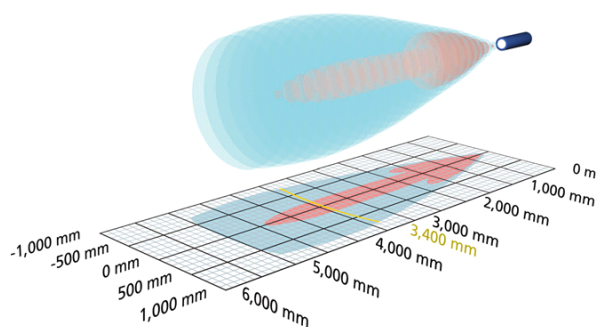
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wms-340/RT

scale drawing



detection zone



echo output



5,000 mm

measuring range	350 - 5.000 mm
design	cylindrical M30
operating mode	sensor for evaluators

ultrasonic-specific

means of measurement	echo propagation time measurement
transducer frequency	120 kHz
blind zone	350 mm
operating range	3,400 mm
maximum range	5,000 mm
reproducibility	± 0.15 %
accuracy	temperature drift 0.17 %/K

electrical data

operating voltage U_B	10 - 30 V d.c., reverse polarity protection
voltage ripple	± 10 %
no-load current consumption	≤ 30 mA
type of connection	4-pin M12 initiator plug

wms-340/RT

outputs

output 1	signal output echo pnp: $I_{max} = 10 \text{ mA}$ (signal output echo)
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inputs

recommended transmitted pulse length	300 μs
recommended measuring cycle time	40 ms
description	controlled by open collector (npn), $I_C \geq 3 \text{ mA}$, $U_{CE} \geq 30 \text{ V}$
input 1	signal input - transmitter

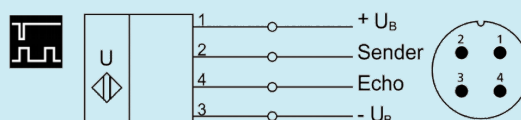
housing

material	brass sleeve, nickel-plated, plastic parts, PBT
ultrasonic transducer	polyurethane foam, epoxy resin with glass contents
class of protection to EN 60529	IP 65
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	260 g
further versions	stainless steel cable connection (on request)

technical features/characteristics

controls	no
scope for settings	no
Synchronisation	yes
multiplex	yes
indicators	no

pin assignment



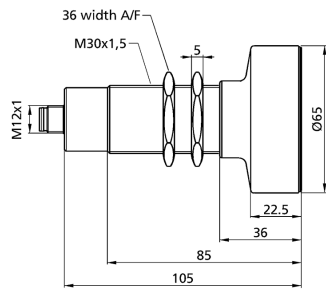
order no.

wms-340/RT

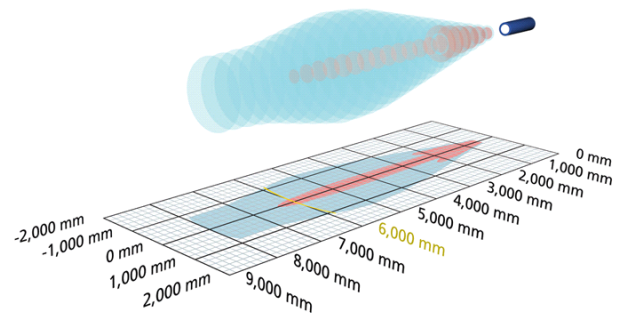
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wms-600/RT

scale drawing



detection zone



echo output



8,000 mm

measuring range	800 - 8.000 mm
design	cylindrical M30
operating mode	sensor for evaluators

ultrasonic-specific

means of measurement	echo propagation time measurement
transducer frequency	80 kHz
blind zone	800 mm
operating range	6,000 mm
maximum range	8,000 mm
reproducibility	$\pm 0.15 \%$
accuracy	temperature drift 0.17 %/K

electrical data

operating voltage U_B	10 - 30 V d.c., reverse polarity protection
voltage ripple	$\pm 10 \%$
no-load current consumption	≤ 30 mA
type of connection	4-pin M12 initiator plug

wms-600/RT

outputs

output 1	signal output echo pnp: $I_{max} = 10 \text{ mA}$ (signal output echo)
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inputs

recommended transmitted pulse length	350 μs
recommended measuring cycle time	65 ms
description	controlled by open collector (npn), $I_C \geq 3 \text{ mA}$, $U_{CE} \geq 30 \text{ V}$
input 1	signal input - transmitter

housing

material	brass sleeve, nickel-plated, plastic parts, PBT
ultrasonic transducer	polyurethane foam, epoxy resin with glass contents
class of protection to EN 60529	IP 65
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	320 g
further versions	stainless steel cable connection (on request)

technical features/characteristics

controls	no
scope for settings	no
Synchronisation	yes
multiplex	yes
indicators	no

pin assignment



order no. **wms-600/RT**

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