

microsonic

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THING  
ULTRA  
SONIC

Extract from our online catalogue:

crm+ ultrasonic sensors

Current to: 2022-03-11



Wear-resistant PEEK film protects the sensor membrane from chemicals, contamination and caking.

## HIGHLIGHTS

- › Ultrasonic transducer protected by PEEK film › for simple cleaning and high resistance to wear
- › Stainless-steel housing
- › Digital display with direct measured value output in mm/cm or %
- › IO-Link interface › for support of the new industry standard
- › Numeric configuration of the sensor using digital display › permits the complete advance configuration of the sensor
- › Automatic synchronisation and multiplex operation › for simultaneous operation of up to ten sensors in close quarters

## BASICS

- › 1 Push-Pull switching output › pnp or npn basis
- › 1 or 2 switching outputs in pnp variant
- › Analogue output 4–20 mA and 0–10 V › with automatic switching between current and voltage outputs
- › 5 detection ranges with a measurement range of 30 mm to 8 m
- › microsonic Teach-in using T1 or T2 buttons
- › 0.025 mm to 2.4 mm resolution
- › Temperature compensation
- › 9–30 V operating voltage
- › LinkControl › for configuration of sensors from a PC

# Description

## Sensor membrane with wear-resistant protective film




In many filling processes, spray on the sensor membrane simply cannot be avoided. These sprays often harden so that after longer periods of operation contamination can only be removed from the sensor membrane by mechanical means. The new protective film of the crm+ sensors now makes it easy to remove caked-on soiling, such as hardened casting compound and cement spatter.

The protective film is also highly resistant to corrosive media. The threaded sleeve is made of 1.4571 stainless steel.



TouchControl with LED display - Wear-resistant PEEK protective film

There are three output stages available for all five detection ranges:

-  1 pnp switching output, optionally in pnp or Push-Pull circuitry
-  2 pnp switching outputs
-  1 analogue output 4–20 mA and 0–10 V

The crm+ sensors with switching output have three operating modes:

- › Single switching point
- › Two-way reflective barrier
- › Window mode

## With TouchControl

all configuration can be done right at the sensor. The easily legible three-digit LED display continually shows the current

distance value and automatically switches between millimetre and centimetre displays.

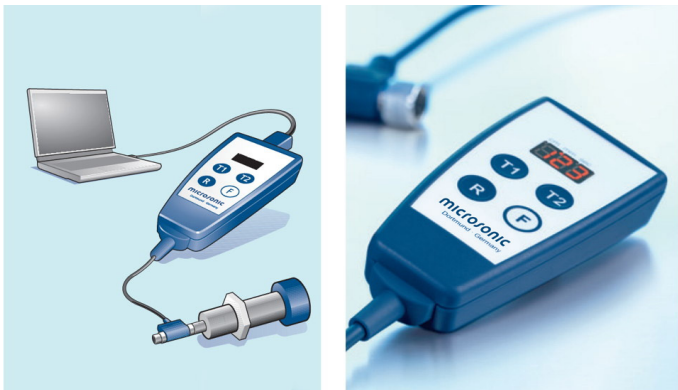
### Setting a switching or analogue output

can optionally be carried out by numeric input of the desired distance values, or using a teach-in procedure. This permits the user to select the configuration method preferred.

The crm+ sensors support synchronisation and multiplex operation and have extensive parameterisation options via LinkControl. For detailed information, please see at [mic+ sensors](#) .

### LinkControl

consists of the **LinkControl adapter** and the **LinkControl software** and facilitates the configuration of the crm+ sensors via a PC or laptop with any conventional Windows® operating system.



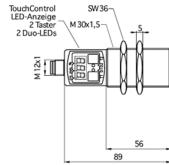
*Sensor connected to the PC via LCA-2 for programming*

### IO-Link integrated

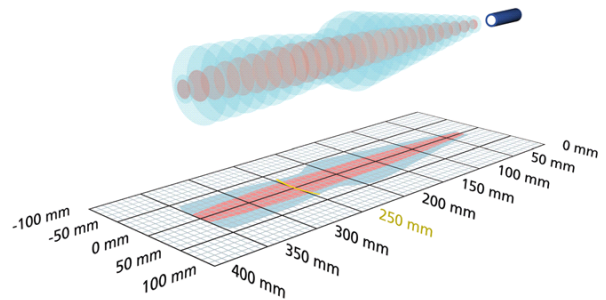
in version 1.1. The crm+ ultrasonic sensors are equipped with Smart Sensor Profile, which creates more transparency between IO-Link devices.

# crm+25/F/TC/E

## scale drawing



## detection zone



1 x Push-Pull

350 mm

measuring range	30 - 350 mm
design	cylindrical M30
operating mode	IO-Link proximity switch/reflective mode reflective barrier window mode
particularities	high chemical resistance stainless steel version display IO-Link version 1.1 Smart Sensor Profile UL listed

## 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
resolution	0.10 mm
reproducibility	± 0.15 %
accuracy	± 1 % (temperature drift internally compensated)

## electrical data

operating voltage $U_b$	9 - 30 V d.c., reverse polarity protection
voltage ripple	± 10 %
no-load current consumption	≤ 80 mA
type of connection	5-pin M12 initiator plug

crm+25/F/TC/E

# crm+25/F/TC/E

## outputs

output 1	Push-Pull, $U_B=3\text{ V}$ , $-U_B+3\text{ V}$ , $I_{\max} = 100\text{ mA}$ Schließer/Öffner einstellbar, kurzschlussfest
switching hysteresis	3 mm
switching frequency	25 Hz
response time	32 ms
delay prior to availability	< 300 ms

## inputs

input 1	com input synchronisation input
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## IO-Link

product name	crm+25/F/TC/E
product ID	29180
SIO mode support	yes
COM mode	COM2 (38,4 kBaud)
min. cycle time	8,8 ms
format of process data	4 Byte
content of process data	Bit 0: initial state Pin 4; Bit 1: initial state Pin 2; Bit 8-15: scale (Int. 8); Bit 16-31: measured value (Int. 16)
ISDU paramter	Identification, measuring configuration, switched output, filter, temperature compensation, operation
system commands	SP1 Teach-in, SP2 Teach-in, factory settings
Smart Sensor Profile	yes
IODD version	IODD version 1.1

## housing

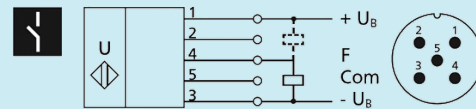
material	stainless steel, plastic parts: PBT, TPU
ultrasonic transducer	coated with PEEK film, PTFE O-ring
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	150 g
further versions	cable connection (on request)

# crm+25/F/TC/E

## technical features/characteristics

temperature compensation	yes
controls	2 push-buttons + LED display (TouchControl)
scope for settings	Teach-in and numeric configuration via TouchControl LCA-2 with LinkControl IO-Link
Synchronisation	yes
multiplex	yes
indicators	3-digit LED display, 2 x three-colour LED
particularities	high chemical resistance stainless steel version display IO-Link version 1.1 Smart Sensor Profile UL listed

## pin assignment



order no.

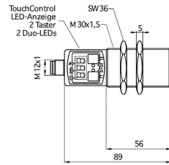
**crm+25/F/TC/E**

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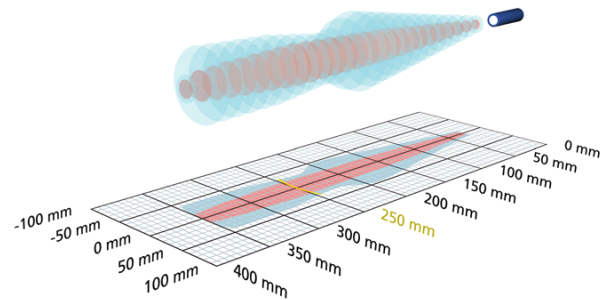


# crm+25/D/TC/E

## scale drawing



## detection zone



1 x pnp



measuring range

30 - 350 mm

design

cylindrical M30

operating mode

proximity switch/reflective mode  
reflective barrier  
window mode

particularities

high chemical resistance  
stainless steel version  
display

## 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

resolution

0.025 mm

reproducibility

± 0.15 %

accuracy

± 1 % (temperature drift internally compensated)

## electrical data

operating voltage  $U_B$

9 - 30 V d.c., reverse polarity protection

voltage ripple

± 10 %

no-load current consumption

≤ 80 mA

type of connection

5-pin M12 initiator plug

# crm+25/D/TC/E

## outputs

output 1	switching output pnp: $I_{\max} = 200 \text{ mA}$ ( $U_B = 2V$ ) NOC/NCC adjustable, short-circuit-proof
switching hysteresis	3 mm
switching frequency	25 Hz
response time	32 ms
delay prior to availability	< 300 ms

## inputs

input 1	com input synchronisation input
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## housing

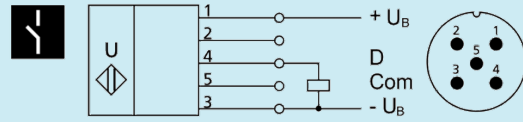
material	stainless steel, plastic parts: PBT, TPU
ultrasonic transducer	coated with PEEK film, PTFE O-ring
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	150 g

## technical features/characteristics

temperature compensation	yes
controls	2 push-buttons + LED display (TouchControl)
scope for settings	Teach-in and numeric configuration via TouchControl LCA-2 with LinkControl
Synchronisation	yes
multiplex	yes
indicators	3-digit LED display, 2 x three-colour LED
particularities	high chemical resistance stainless steel version display

# crm+25/D/TC/E

## pin assignment



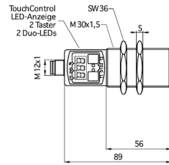
order no.

crm+25/D/TC/E

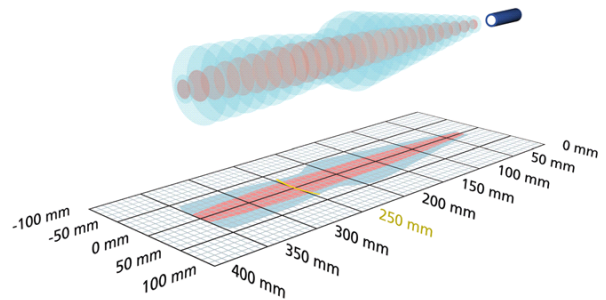
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# crm+25/DD/TC/E

## scale drawing



## detection zone



2 x pnp



350 mm

measuring range	30 - 350 mm
design	cylindrical M30
operating mode	proximity switch/reflective mode reflective barrier window mode
particularities	high chemical resistance stainless steel version display

## 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
resolution	0.025 mm
reproducibility	± 0.15 %
accuracy	± 1 % (temperature drift internally compensated)

## electrical data

operating voltage $U_B$	9 - 30 V d.c., reverse polarity protection
voltage ripple	± 10 %
no-load current consumption	≤ 80 mA
type of connection	5-pin M12 initiator plug

# crm+25/DD/TC/E

## outputs

output 1	switching output pnp: $I_{\max} = 200 \text{ mA}$ ( $U_B = 2V$ ) NOC/NCC adjustable, short-circuit-proof
output 2	switching output pnp: $I_{\max} = 200 \text{ mA}$ ( $U_B = 2V$ ) NOC/NCC adjustable, short-circuit-proof
switching hysteresis	3 mm
switching frequency	25 Hz
response time	32 ms
delay prior to availability	< 300 ms

## inputs

input 1	com input synchronisation input
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## housing

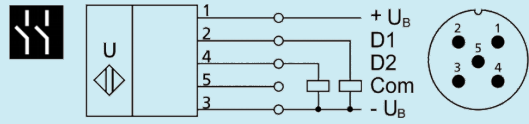
material	stainless steel, plastic parts: PBT, TPU
ultrasonic transducer	coated with PEEK film, PTFE O-ring
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	150 g

## technical features/characteristics

temperature compensation	yes
controls	2 push-buttons + LED display (TouchControl)
scope for settings	Teach-in and numeric configuration via TouchControl LCA-2 with LinkControl
Synchronisation	yes
multiplex	yes
indicators	3-digit LED display, 2 x three-colour LED
particularities	high chemical resistance stainless steel version display

# crm+25/DD/TC/E

## pin assignment



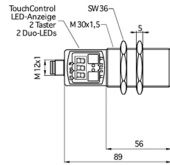
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crm+25/DD/TC/E

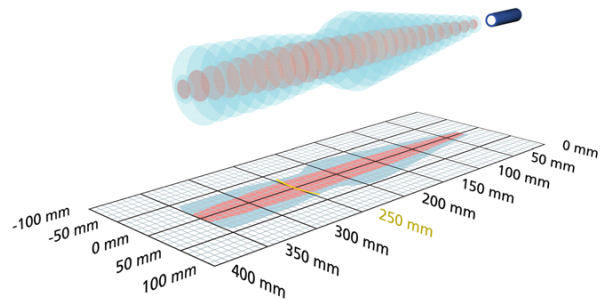
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# crm+25/IU/TC/E

## scale drawing



## detection zone



1 x analogue 4-20 mA + 0-10 V



measuring range	30 - 350 mm
design	cylindrical M30
operating mode	analogue distance measurements
particularities	high chemical resistance stainless steel version display

## 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
resolution	0.025 mm
reproducibility	± 0.15 %
accuracy	± 1 % (temperature drift internally compensated)

## electrical data

operating voltage $U_B$	9 - 30 V d.c., reverse polarity protection
voltage ripple	± 10 %
no-load current consumption	≤ 80 mA
type of connection	5-pin M12 initiator plug

# crm+25/IU/TC/E

## outputs

output 1	analogue output current: 4-20 mA / voltage: 0-10 V (at $U_B \geq 15$ V), short-circuit-proof switchable rising/falling
response time	32 ms
delay prior to availability	< 300 ms

## inputs

input 1	com input synchronisation input
---------	------------------------------------

## housing

material	stainless steel, plastic parts: PBT, TPU
ultrasonic transducer	coated with PEEK film, PTFE O-ring
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	150 g

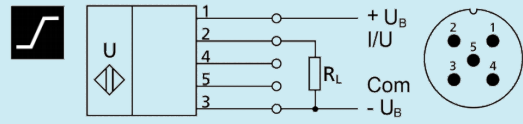
## technical features/characteristics

temperature compensation	yes
controls	2 push-buttons + LED display (TouchControl)
scope for settings	Teach-in and numeric configuration via TouchControl LCA-2 with LinkControl
Synchronisation	yes
multiplex	yes
indicators	3-digit LED display, 2 x three-colour LED
particularities	high chemical resistance stainless steel version display



# crm+25/IU/TC/E

## pin assignment



order no.

crm+25/IU/TC/E

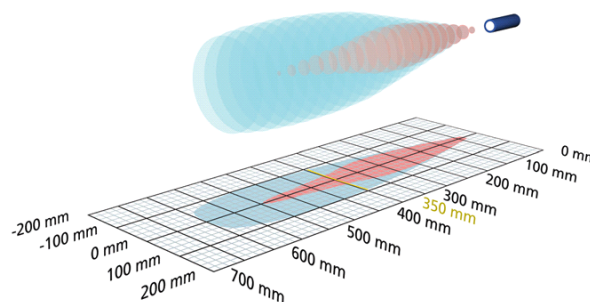
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# crm+35/F/TC/E

## scale drawing



## detection zone



1 x Push-Pull



measuring range	85 - 600 mm
design	cylindrical M30
operating mode	IO-Link proximity switch/reflective mode reflective barrier window mode
particularities	high chemical resistance stainless steel version display IO-Link version 1.1 Smart Sensor Profile UL listed

## ultrasonic-specific

means of measurement	echo propagation time measurement
transducer frequency	360 kHz
blind zone	85 mm
operating range	350 mm
maximum range	600 mm
resolution	0.10 mm
reproducibility	± 0.15 %
accuracy	± 1 % (temperature drift internally compensated)

## electrical data

operating voltage $U_b$	9 - 30 V d.c., reverse polarity protection
voltage ripple	± 10 %
no-load current consumption	≤ 80 mA
type of connection	5-pin M12 initiator plug

crm+35/F/TC/E

# crm+35/F/TC/E

## outputs

output 1	Push-Pull, $U_B=3\text{ V}$ , $-U_B+3\text{ V}$ , $I_{\max} = 100\text{ mA}$ Schließer/Öffner einstellbar, kurzschlussfest
switching hysteresis	5 mm
switching frequency	12 Hz
response time	64 ms
delay prior to availability	< 300 ms

## inputs

input 1	com input synchronisation input
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## IO-Link

product name	crm+35/F/TC/E
product ID	29280
SIO mode support	yes
COM mode	COM2 (38,4 kBaud)
min. cycle time	16,4 ms
format of process data	4 Byte
content of process data	Bit 0: initial state Pin 4; Bit 1: initial state Pin 2; Bit 8-15: scale (Int. 8); Bit 16-31: measured value (Int. 16)
ISDU paramter	Identification, measuring configuration, switched output, filter, temperature compensation, operation
system commands	SP1 Teach-in, SP2 Teach-in, factory settings
Smart Sensor Profile	yes
IODD version	IODD version 1.1

## housing

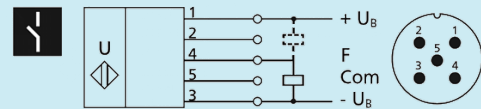
material	stainless steel, plastic parts: PBT, TPU
ultrasonic transducer	coated with PEEK film, PTFE O-ring
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	150 g
further versions	cable connection (on request)

# crm+35/F/TC/E

## technical features/characteristics

temperature compensation	yes
controls	2 push-buttons + LED display (TouchControl)
scope for settings	Teach-in and numeric configuration via TouchControl LCA-2 with LinkControl IO-Link
Synchronisation	yes
multiplex	yes
indicators	3-digit LED display, 2 x three-colour LED
particularities	high chemical resistance stainless steel version display IO-Link version 1.1 Smart Sensor Profile UL listed

## pin assignment



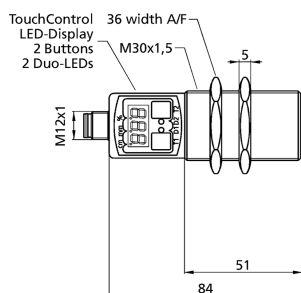
order no.

**crm+35/F/TC/E**

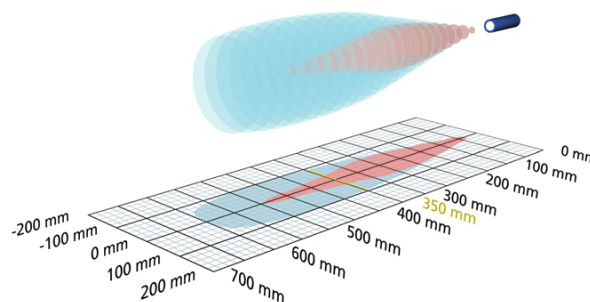
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# crm+35/D/TC/E

## scale drawing



## detection zone



1 x pnp



measuring range

85 - 600 mm

design

cylindrical M30

operating mode

proximity switch/reflective mode  
reflective barrier  
window mode

particularities

high chemical resistance  
stainless steel version  
display

## ultrasonic-specific

means of measurement

echo propagation time measurement

transducer frequency

360 kHz

blind zone

85 mm

operating range

350 mm

maximum range

600 mm

resolution

0.025 mm

reproducibility

± 0.15 %

accuracy

± 1 % (temperature drift internally compensated)

## electrical data

operating voltage  $U_B$

9 - 30 V d.c., reverse polarity protection

voltage ripple

± 10 %

no-load current consumption

≤ 80 mA

type of connection

5-pin M12 initiator plug

# crm+35/D/TC/E

## outputs

output 1	switching output pnp: $I_{\max} = 200 \text{ mA}$ ( $U_B = 2V$ ) NOC/NCC adjustable, short-circuit-proof
switching hysteresis	5 mm
switching frequency	12 Hz
response time	64 ms
delay prior to availability	< 300 ms

## inputs

input 1	com input synchronisation input
---------	------------------------------------

## housing

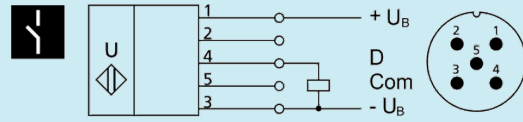
material	stainless steel, plastic parts: PBT, TPU
ultrasonic transducer	coated with PEEK film, PTFE O-ring
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	150 g
further versions	cable connection (on request)

## technical features/characteristics

temperature compensation	yes
controls	2 push-buttons + LED display (TouchControl)
scope for settings	Teach-in and numeric configuration via TouchControl LCA-2 with LinkControl
Synchronisation	yes
multiplex	yes
indicators	3-digit LED display, 2 x three-colour LED
particularities	high chemical resistance stainless steel version display

# crm+35/D/TC/E

## pin assignment



order no.

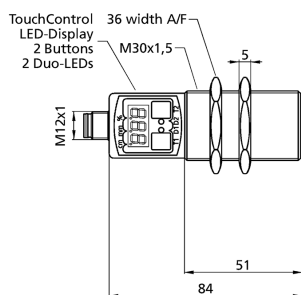
crm+35/D/TC/E

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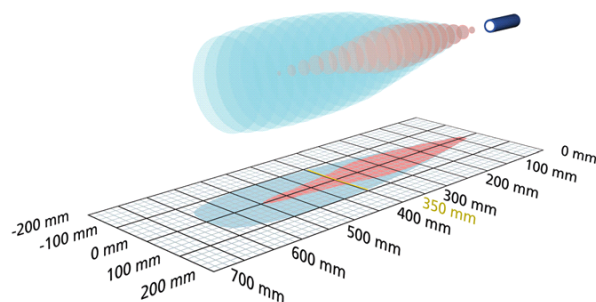


# crm+35/DD/TC/E

## scale drawing



## detection zone



2 x pnp



600 mm

measuring range	85 - 600 mm
design	cylindrical M30
operating mode	proximity switch/reflective mode reflective barrier window mode
particularities	high chemical resistance stainless steel version display

## ultrasonic-specific

means of measurement	echo propagation time measurement
transducer frequency	360 kHz
blind zone	85 mm
operating range	350 mm
maximum range	600 mm
resolution	0.025 mm
reproducibility	± 0.15 %
accuracy	± 1 % (temperature drift internally compensated)

## electrical data

operating voltage $U_B$	9 - 30 V d.c., reverse polarity protection
voltage ripple	± 10 %
no-load current consumption	≤ 80 mA
type of connection	5-pin M12 initiator plug

# crm+35/DD/TC/E

## outputs

output 1	switching output pnp: $I_{\max} = 200 \text{ mA}$ ( $U_B - 2V$ ) NOC/NCC adjustable, short-circuit-proof
output 2	switching output pnp: $I_{\max} = 200 \text{ mA}$ ( $U_B - 2V$ ) NOC/NCC adjustable, short-circuit-proof
switching hysteresis	5 mm
switching frequency	12 Hz
response time	64 ms
delay prior to availability	< 300 ms

## inputs

input 1	com input synchronisation input
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## housing

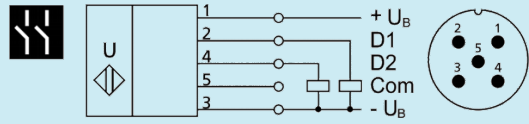
material	stainless steel, plastic parts: PBT, TPU
ultrasonic transducer	coated with PEEK film, PTFE O-ring
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	150 g
further versions	cable connection (on request)

## technical features/characteristics

temperature compensation	yes
controls	2 push-buttons + LED display (TouchControl)
scope for settings	Teach-in and numeric configuration via TouchControl LCA-2 with LinkControl
Synchronisation	yes
multiplex	yes
indicators	3-digit LED display, 2 x three-colour LED
particularities	high chemical resistance stainless steel version display

# crm+35/DD/TC/E

## pin assignment



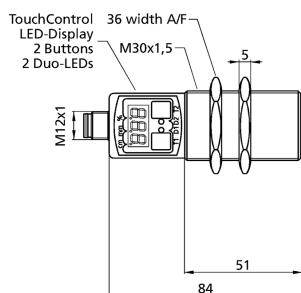
order no.

crm+35/DD/TC/E

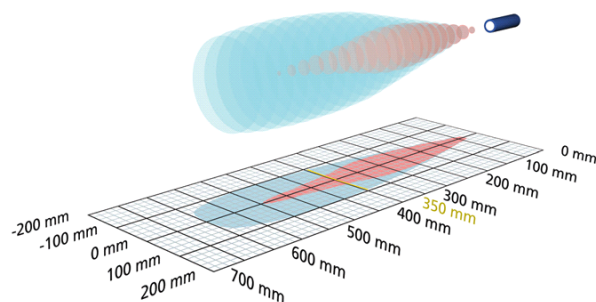
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# crm+35/IU/TC/E

## scale drawing



## detection zone



1 x analogue 4-20 mA + 0-10 V



600 mm

measuring range	85 - 600 mm
design	cylindrical M30
operating mode	analogue distance measurements
particularities	high chemical resistance stainless steel version display

## ultrasonic-specific

means of measurement	echo propagation time measurement
transducer frequency	360 kHz
blind zone	85 mm
operating range	350 mm
maximum range	600 mm
resolution	0.069 mm to 0.17 mm, depending on the analogue window
reproducibility	± 0.15 %
accuracy	± 1 % (temperature drift internally compensated)

## electrical data

operating voltage $U_b$	9 - 30 V d.c., reverse polarity protection
voltage ripple	± 10 %
no-load current consumption	≤ 80 mA
type of connection	5-pin M12 initiator plug

# crm+35/IU/TC/E

## outputs

output 1	analogue output current: 4-20 mA / voltage: 0-10 V (at $U_B \geq 15$ V), short-circuit-proof switchable rising/falling
response time	64 ms
delay prior to availability	< 300 ms

## inputs

input 1	com input synchronisation input
---------	------------------------------------

## housing

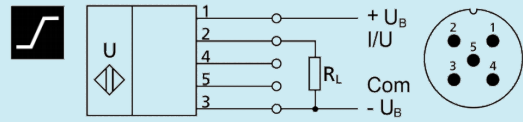
material	stainless steel, plastic parts: PBT, TPU
ultrasonic transducer	coated with PEEK film, PTFE O-ring
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	150 g
further versions	cable connection (on request)

## technical features/characteristics

temperature compensation	yes
controls	2 push-buttons + LED display (TouchControl)
scope for settings	Teach-in and numeric configuration via TouchControl LCA-2 with LinkControl
Synchronisation	yes
multiplex	yes
indicators	3-digit LED display, 2 x three-colour LED
particularities	high chemical resistance stainless steel version display

# crm+35/IU/TC/E

## pin assignment



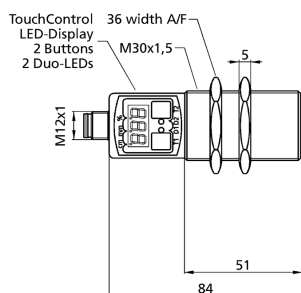
order no.

crm+35/IU/TC/E

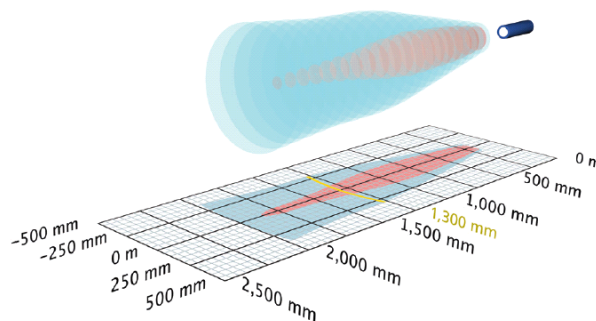
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only. They do not warrant any product features.

# crm+130/F/TC/E

## scale drawing



## detection zone



1 x Push-Pull



2,000 mm

measuring range	200 - 2.000 mm
design	cylindrical M30
operating mode	IO-Link proximity switch/reflective mode reflective barrier window mode
particularities	high chemical resistance stainless steel version display IO-Link version 1.1 Smart Sensor Profile UL listed

## 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
resolution	1 mm
reproducibility	± 0.15 %
accuracy	± 1 % (temperature drift internally compensated)

## electrical data

operating voltage $U_b$	9 - 30 V d.c., reverse polarity protection
voltage ripple	± 10 %
no-load current consumption	≤ 80 mA
type of connection	5-pin M12 initiator plug

crm+130/F/TC/E



# crm+130/F/TC/E

## outputs

output 1	Push-Pull, $U_B=3\text{ V}$ , $-U_B+3\text{ V}$ , $I_{\max} = 100\text{ mA}$ Schließer/Öffner einstellbar, kurzschlussfest
switching hysteresis	20 mm
switching frequency	8 Hz
response time	92 ms
delay prior to availability	< 300 ms

## inputs

input 1	com input synchronisation input
---------	------------------------------------

## IO-Link

product name	crm+130/F/TC/E
product ID	29380
SIO mode support	yes
COM mode	COM2 (38,4 kBaud)
min. cycle time	23,6 ms
format of process data	4 Byte
content of process data	Bit 0: Q1 switch status; Bit 8-15: scale (Int. 8); Bit 16-31: measured value (Int. 16)
ISDU paramter	Identification, measuring configuration, switched output, filter, temperature compensation, operation
system commands	SP1 Teach-in, SP2 Teach-in, factory settings
Smart Sensor Profile	yes
IODD version	IODD version 1.1

## housing

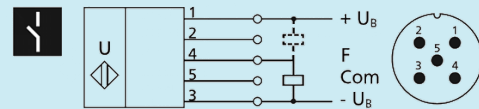
material	stainless steel, plastic parts: PBT, TPU
ultrasonic transducer	coated with PEEK film, PTFE O-ring
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	150 g
further versions	cable connection (on request)

# crm+130/F/TC/E

## technical features/characteristics

temperature compensation	yes
controls	2 push-buttons + LED display (TouchControl)
scope for settings	Teach-in and numeric configuration via TouchControl LCA-2 with LinkControl IO-Link
Synchronisation	yes
multiplex	yes
indicators	3-digit LED display, 2 x three-colour LED
particularities	high chemical resistance stainless steel version display IO-Link version 1.1 Smart Sensor Profile UL listed

## pin assignment



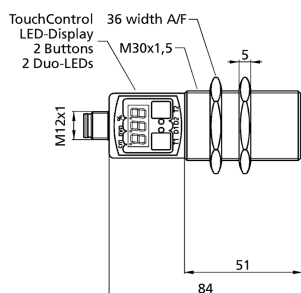
order no.

**crm+130/F/TC/E**

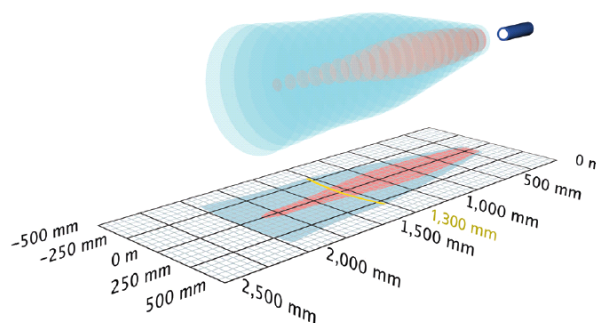
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# crm+130/D/TC/E

## scale drawing



## detection zone



1 x pnp



2,000 mm

measuring range	200 - 2.000 mm
design	cylindrical M30
operating mode	proximity switch/reflective mode reflective barrier window mode
particularities	high chemical resistance stainless steel version display

## 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
resolution	0.18 mm
reproducibility	± 0.15 %
accuracy	± 1 % (temperature drift internally compensated)

## electrical data

operating voltage $U_B$	9 - 30 V d.c., reverse polarity protection
voltage ripple	± 10 %
no-load current consumption	≤ 80 mA
type of connection	5-pin M12 initiator plug

# crm+130/D/TC/E

## outputs

output 1	switching output pnp: $I_{\max} = 200 \text{ mA}$ ( $U_B = 2V$ ) NOC/NCC adjustable, short-circuit-proof
switching hysteresis	20 mm
switching frequency	8 Hz
response time	92 ms
delay prior to availability	< 300 ms

## inputs

input 1	com input synchronisation input
---------	------------------------------------

## housing

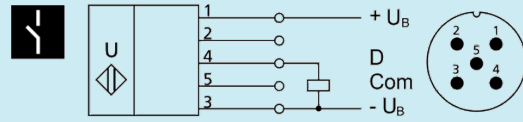
material	stainless steel, plastic parts: PBT, TPU
ultrasonic transducer	coated with PEEK film, PTFE O-ring
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	150 g
further versions	cable connection (on request)

## technical features/characteristics

temperature compensation	yes
controls	2 push-buttons + LED display (TouchControl)
scope for settings	Teach-in and numeric configuration via TouchControl LCA-2 with LinkControl
Synchronisation	yes
multiplex	yes
indicators	3-digit LED display, 2 x three-colour LED
particularities	high chemical resistance stainless steel version display

# crm+130/D/TC/E

## pin assignment



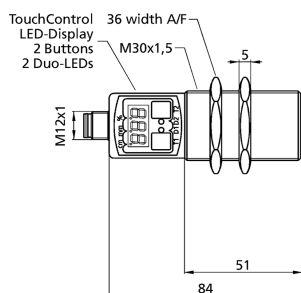
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**crm+130/D/TC/E**

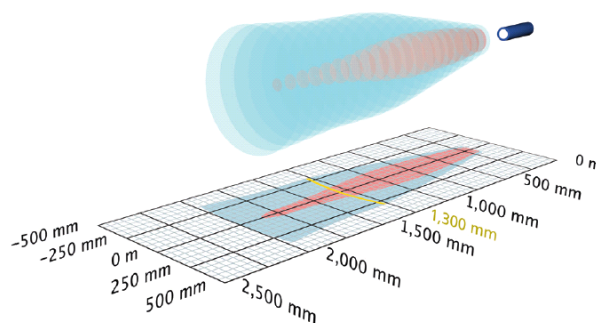
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# crm+130/DD/TC/E

## scale drawing



## detection zone



2 x pnp



2,000 mm

measuring range	200 - 2.000 mm
design	cylindrical M30
operating mode	proximity switch/reflective mode reflective barrier window mode
particularities	high chemical resistance stainless steel version display

## 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
resolution	0.18 mm
reproducibility	± 0.15 %
accuracy	± 1 % (temperature drift internally compensated)

## electrical data

operating voltage $U_B$	9 - 30 V d.c., reverse polarity protection
voltage ripple	± 10 %
no-load current consumption	≤ 80 mA
type of connection	5-pin M12 initiator plug

# crm+130/DD/TC/E

## outputs

output 1	switching output pnp: $I_{\max} = 200 \text{ mA}$ ( $U_B - 2V$ ) NOC/NCC adjustable, short-circuit-proof
output 2	switching output pnp: $I_{\max} = 200 \text{ mA}$ ( $U_B - 2V$ ) NOC/NCC adjustable, short-circuit-proof
switching hysteresis	20 mm
switching frequency	8 Hz
response time	92 ms
delay prior to availability	< 300 ms

## inputs

input 1	com input synchronisation input
---------	------------------------------------

## housing

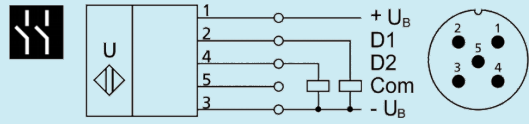
material	stainless steel, plastic parts: PBT, TPU
ultrasonic transducer	coated with PEEK film, PTFE O-ring
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	150 g
further versions	cable connection (on request)

## technical features/characteristics

temperature compensation	yes
controls	2 push-buttons + LED display (TouchControl)
scope for settings	Teach-in and numeric configuration via TouchControl LCA-2 with LinkControl
Synchronisation	yes
multiplex	yes
indicators	3-digit LED display, 2 x three-colour LED
particularities	high chemical resistance stainless steel version display

# crm+130/DD/TC/E

## pin assignment



order no.

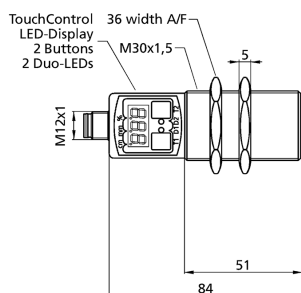
crm+130/DD/TC/E

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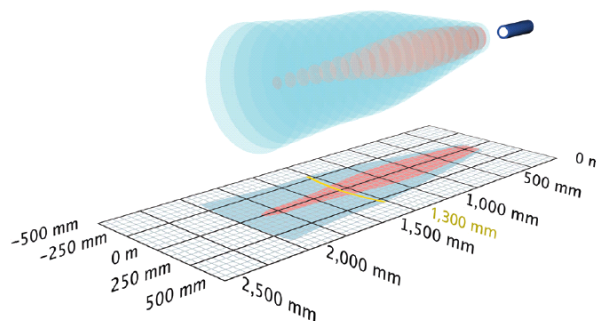


# crm+130/IU/TC/E

## scale drawing



## detection zone



1 x analogue 4-20 mA + 0-10 V



2,000 mm

measuring range	200 - 2.000 mm
design	cylindrical M30
operating mode	analogue distance measurements
particularities	high chemical resistance stainless steel version display

## 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
resolution	0.18 mm
reproducibility	± 0.15 %
accuracy	± 1 % (temperature drift internally compensated)

## electrical data

operating voltage $U_b$	9 - 30 V d.c., reverse polarity protection
voltage ripple	± 10 %
no-load current consumption	≤ 80 mA
type of connection	5-pin M12 initiator plug

# crm+130/IU/TC/E

## outputs

output 1	analogue output current: 4-20 mA / voltage: 0-10 V (at $U_B \geq 15$ V), short-circuit-proof switchable rising/falling
response time	92 ms
delay prior to availability	< 300 ms

## inputs

input 1	com input synchronisation input
---------	------------------------------------

## housing

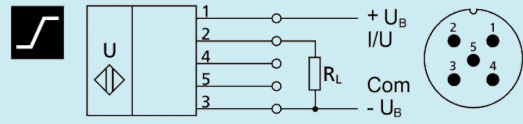
material	stainless steel, plastic parts: PBT, TPU
ultrasonic transducer	coated with PEEK film, PTFE O-ring
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	150 g
further versions	cable connection (on request)

## technical features/characteristics

temperature compensation	yes
controls	2 push-buttons + LED display (TouchControl)
scope for settings	Teach-in and numeric configuration via TouchControl LCA-2 with LinkControl
Synchronisation	yes
multiplex	yes
indicators	3-digit LED display, 2 x three-colour LED
particularities	high chemical resistance stainless steel version display

# crm+130/IU/TC/E

## pin assignment



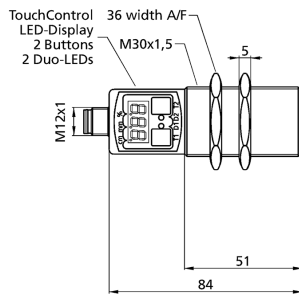
order no.

crm+130/IU/TC/E

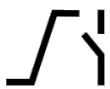
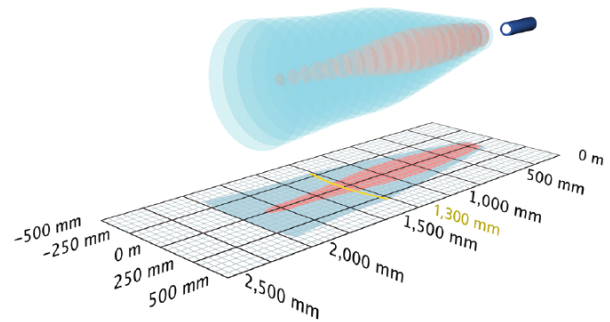
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# crm+130/DIU/TC/E

## scale drawing



## detection zone



1 x pnp + 1 x analogue 4-20 mA / 0-10 V

2,000 mm

measuring range	200 - 2.000 mm
design	cylindrical M30
operating mode	proximity switch/reflective mode reflective barrier window mode analogue distance measurement
particularities	high chemical resistance stainless steel version display

## 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
resolution	0.18 mm
reproducibility	± 0.15 %
accuracy	± 1 % (temperature drift internally compensated)

## electrical data

operating voltage $U_B$	9 - 30 V d.c., reverse polarity protection
voltage ripple	± 10 %
no-load current consumption	≤ 80 mA
type of connection	5-pin M12 initiator plug

# crm+130/DIU/TC/E

## outputs

output 1	analogue output current: 4-20 mA / voltage: 0-10 V (at $U_B \geq 15$ V), short-circuit-proof switchable rising/falling
output 2	switching output pnp: $I_{max} = 200$ mA ( $U_B - 2$ V) NOC/NCC adjustable, short-circuit-proof
switching hysteresis	20 mm
switching frequency	8 Hz
response time	92 ms
delay prior to availability	< 300 ms

## inputs

input 1	com input synchronisation input
---------	------------------------------------

## housing

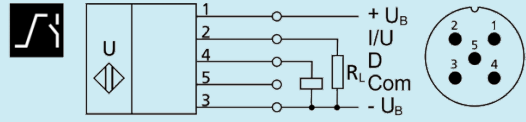
material	stainless steel, plastic parts: PBT, TPU
ultrasonic transducer	coated with PEEK film, PTFE O-ring
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	150 g
further versions	cable connection (on request)

## technical features/characteristics

temperature compensation	yes
controls	2 push-buttons + LED display (TouchControl)
scope for settings	Teach-in and numeric configuration via TouchControl LCA-2 with LinkControl
Synchronisation	yes
multiplex	yes
indicators	3-digit LED display, 2 x three-colour LED
particularities	high chemical resistance stainless steel version display

# crm+130/DIU/TC/E

## pin assignment



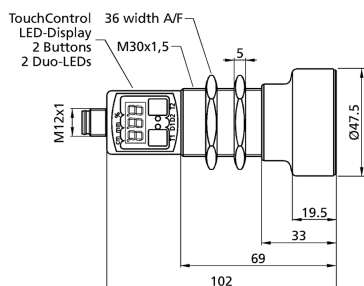
order no.

crm+130/DIU/TC/E

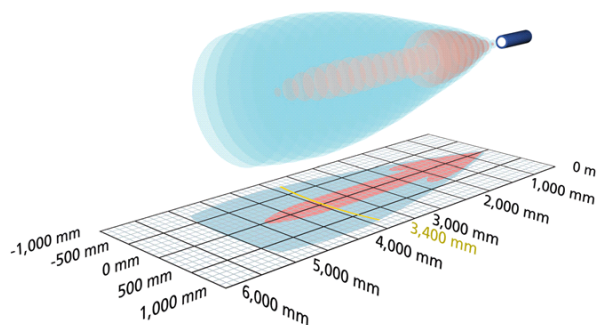
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# crm+340/F/TC/E

## scale drawing



## detection zone



1 x Push-Pull



5,000 mm

measuring range	350 - 5.000 mm
design	cylindrical M30
operating mode	IO-Link proximity switch/reflective mode reflective barrier window mode
particularities	high chemical resistance stainless steel version display IO-Link version 1.1 Smart Sensor Profile UL listed

## 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
resolution	1 mm
reproducibility	± 0.15 %
accuracy	± 1 % (temperature drift internally compensated)

## electrical data

operating voltage $U_b$	9 - 30 V d.c., reverse polarity protection
voltage ripple	± 10 %
no-load current consumption	≤ 80 mA
type of connection	5-pin M12 initiator plug

crm+340/F/TC/E



# crm+340/F/TC/E

## outputs

output 1	Push-Pull, $U_B=3\text{ V}$ , $-U_B+3\text{ V}$ , $I_{\max} = 100\text{ mA}$ Schließer/Öffner einstellbar, kurzschlussfest
switching hysteresis	50 mm
switching frequency	4 Hz
response time	172 ms
delay prior to availability	< 380 ms

## inputs

input 1	com input synchronisation input
---------	------------------------------------

## IO-Link

product name	crm+340/F/TC/E
product ID	29480
SIO mode support	yes
COM mode	COM2 (38,4 kBaud)
min. cycle time	44,8 ms
format of process data	4 Byte
content of process data	Bit 0: initial state Pin 4; Bit 1: initial state Pin 2; Bit 8-15: scale (Int. 8); Bit 16-31: measured value (Int. 16)
ISDU paramter	Identification, measuring configuration, switched output, filter, temperature compensation, operation
system commands	SP1 Teach-in, SP2 Teach-in, factory settings
Smart Sensor Profile	yes
IODD version	IODD version 1.1

## housing

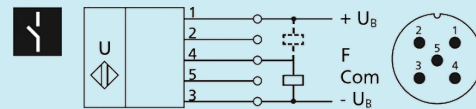
material	stainless steel, plastic parts: PBT, TPU
ultrasonic transducer	coated with PEEK film, PTFE O-ring
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	210 g
further versions	cable connection (on request)

# crm+340/F/TC/E

## technical features/characteristics

temperature compensation	yes
controls	2 push-buttons + LED display (TouchControl)
scope for settings	Teach-in and numeric configuration via TouchControl LCA-2 with LinkControl IO-Link
Synchronisation	yes
multiplex	yes
indicators	3-digit LED display, 2 x three-colour LED
particularities	high chemical resistance stainless steel version display IO-Link version 1.1 Smart Sensor Profile UL listed

## pin assignment



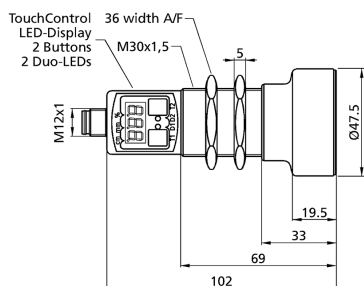
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**crm+340/F/TC/E**

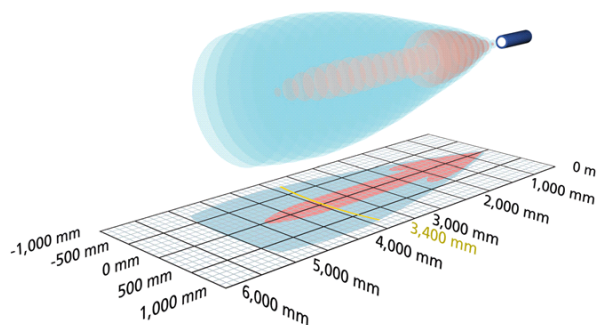
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# crm+340/D/TC/E

## scale drawing



## detection zone



1 x pnp



5,000 mm

measuring range	350 - 5.000 mm
design	cylindrical M30
operating mode	proximity switch/reflective mode reflective barrier window mode
particularities	high chemical resistance stainless steel version display

## 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
resolution	0.18 mm
reproducibility	± 0.15 %
accuracy	± 1 % (temperature drift internally compensated)

## electrical data

operating voltage $U_B$	9 - 30 V d.c., reverse polarity protection
voltage ripple	± 10 %
no-load current consumption	≤ 80 mA
type of connection	5-pin M12 initiator plug

# crm+340/D/TC/E

## outputs

output 1	switching output pnp: $I_{\max} = 200 \text{ mA}$ ( $U_B = 2V$ ) NOC/NCC adjustable, short-circuit-proof
switching hysteresis	50 mm
switching frequency	4 Hz
response time	172 ms
delay prior to availability	< 380 ms

## inputs

input 1	com input synchronisation input
---------	------------------------------------

## housing

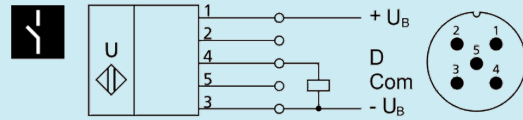
material	stainless steel, plastic parts: PBT, TPU
ultrasonic transducer	coated with PEEK film, PTFE O-ring
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	210 g
further versions	cable connection (on request)

## technical features/characteristics

temperature compensation	yes
controls	2 push-buttons + LED display (TouchControl)
scope for settings	Teach-in and numeric configuration via TouchControl LCA-2 with LinkControl
Synchronisation	yes
multiplex	yes
indicators	3-digit LED display, 2 x three-colour LED
particularities	high chemical resistance stainless steel version display

# crm+340/D/TC/E

## pin assignment



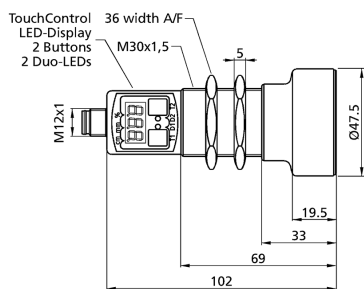
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crm+340/D/TC/E

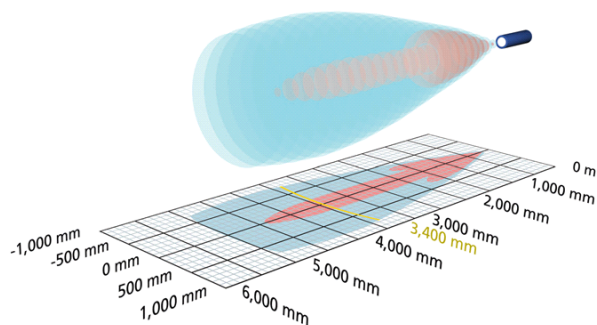
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# crm+340/DD/TC/E

## scale drawing



## detection zone



2 x pnp



5,000 mm

measuring range	350 - 5.000 mm
design	cylindrical M30
operating mode	proximity switch/reflective mode reflective barrier window mode
particularities	high chemical resistance stainless steel version display

## 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
resolution	0.18 mm
reproducibility	± 0.15 %
accuracy	± 1 % (temperature drift internally compensated)

## electrical data

operating voltage $U_B$	9 - 30 V d.c., reverse polarity protection
voltage ripple	± 10 %
no-load current consumption	≤ 80 mA
type of connection	5-pin M12 initiator plug

# crm+340/DD/TC/E

## outputs

output 1	switching output pnp: $I_{\max} = 200 \text{ mA}$ ( $U_B - 2V$ ) NOC/NCC adjustable, short-circuit-proof
output 2	switching output pnp: $I_{\max} = 200 \text{ mA}$ ( $U_B - 2V$ ) NOC/NCC adjustable, short-circuit-proof
switching hysteresis	50 mm
switching frequency	4 Hz
response time	172 ms
delay prior to availability	< 380 ms

## inputs

input 1	com input synchronisation input
---------	------------------------------------

## housing

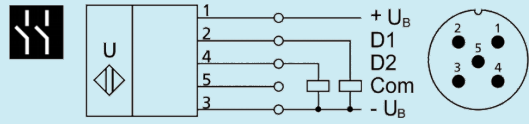
material	stainless steel, plastic parts: PBT, TPU
ultrasonic transducer	coated with PEEK film, PTFE O-ring
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	210 g
further versions	cable connection (on request)

## technical features/characteristics

temperature compensation	yes
controls	2 push-buttons + LED display (TouchControl)
scope for settings	Teach-in and numeric configuration via TouchControl LCA-2 with LinkControl
Synchronisation	yes
multiplex	yes
indicators	3-digit LED display, 2 x three-colour LED
particularities	high chemical resistance stainless steel version display

# crm+340/DD/TC/E

## pin assignment



order no.

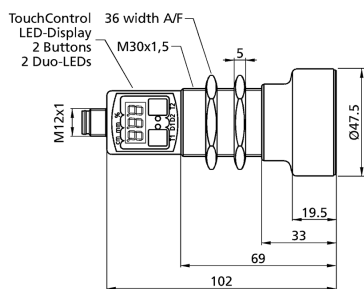
crm+340/DD/TC/E

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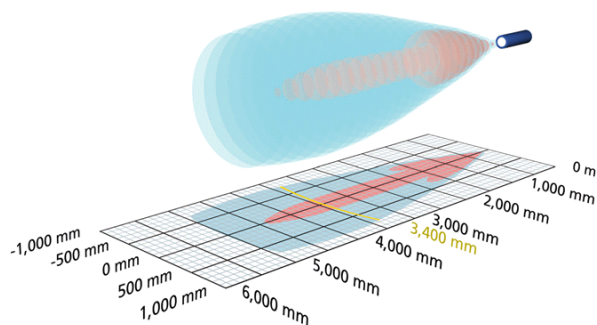


# crm+340/IU/TC/E

## scale drawing



## detection zone



1 x analogue 4-20 mA + 0-10 V



5,000 mm

measuring range	350 - 5.000 mm
design	cylindrical M30
operating mode	analogue distance measurements
particularities	high chemical resistance stainless steel version display

## 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
resolution	0.18 mm
reproducibility	± 0.15 %
accuracy	± 1 % (temperature drift internally compensated)

## electrical data

operating voltage $U_B$	9 - 30 V d.c., reverse polarity protection
voltage ripple	± 10 %
no-load current consumption	≤ 80 mA
type of connection	5-pin M12 initiator plug

# crm+340/IU/TC/E

## outputs

output 1	analogue output current: 4-20 mA / voltage: 0-10 V (at $U_B \geq 15$ V), short-circuit-proof switchable rising/falling
response time	172 ms
delay prior to availability	< 380 ms

## inputs

input 1	com input synchronisation input
---------	------------------------------------

## housing

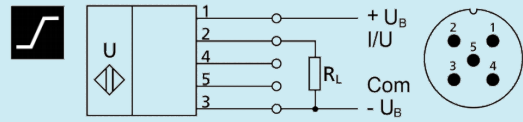
material	stainless steel, plastic parts: PBT, TPU
ultrasonic transducer	coated with PEEK film, PTFE O-ring
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	210 g
further versions	cable connection (on request)

## technical features/characteristics

temperature compensation	yes
controls	2 push-buttons + LED display (TouchControl)
scope for settings	Teach-in and numeric configuration via TouchControl LCA-2 with LinkControl
Synchronisation	yes
multiplex	yes
indicators	3-digit LED display, 2 x three-colour LED
particularities	high chemical resistance stainless steel version display

# crm+340/IU/TC/E

## pin assignment



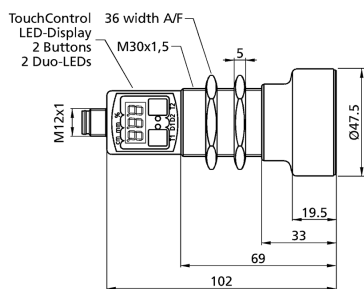
order no.

crm+340/IU/TC/E

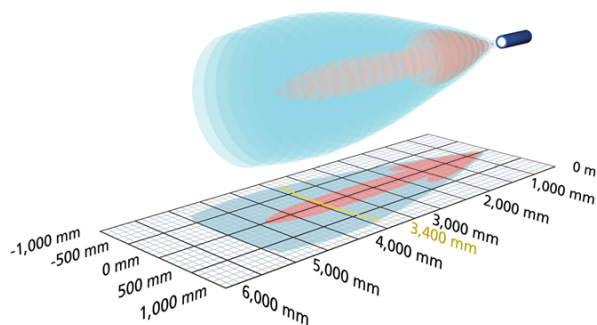
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# crm+340/DIU/TC/E

## scale drawing



## detection zone



1 x pnp + 1 x analogue 4-20 mA / 0-10 V

5,000 mm

measuring range	350 - 5.000 mm
design	cylindrical M30
operating mode	proximity switch/reflective mode reflective barrier window mode analogue distance measurement
particularities	display

## 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
resolution	0.025 mm
reproducibility	± 0.15 %
accuracy	± 1 % (temperature drift internally compensated)

## electrical data

operating voltage $U_B$	9 - 30 V d.c., reverse polarity protection
voltage ripple	± 10 %
no-load current consumption	≤ 80 mA
type of connection	5-pin M12 initiator plug

# crm+340/DIU/TC/E

## outputs

output 1	analogue output current: 4-20 mA / voltage: 0-10 V (at $U_B \geq 15$ V), short-circuit-proof switchable rising/falling
output 2	switching output pnp: $I_{max} = 200$ mA ( $U_B - 2$ V) NOC/NCC adjustable, short-circuit-proof
switching hysteresis	50 mm
switching frequency	4 Hz
response time	172 ms
delay prior to availability	< 380 ms

## inputs

input 1	com input synchronisation input
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## housing

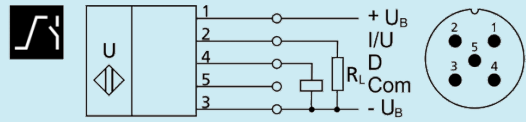
material	brass sleeve, nickel-plated, plastic parts, PBT, TPU
ultrasonic transducer	polyurethane foam, epoxy resin with glass contents
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	210 g
further versions	stainless steel cable connection (on request)

## technical features/characteristics

temperature compensation	yes
controls	2 push-buttons + LED display (TouchControl)
scope for settings	Teach-in and numeric configuration via TouchControl LCA-2 with LinkControl
Synchronisation	yes
multiplex	yes
indicators	3-digit LED display, 2 x three-colour LED
particularities	display

# crm+340/DIU/TC/E

## pin assignment



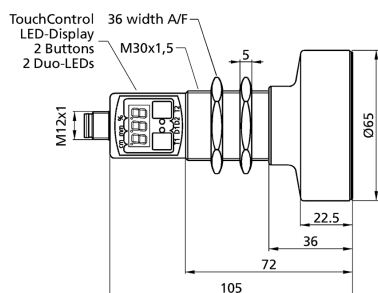
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crm+340/DIU/TC/E

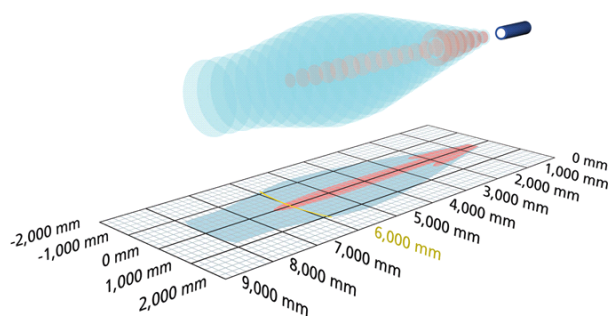
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# crm+600/F/TC/E

## scale drawing



## detection zone



1 x Push-Pull



8,000 mm

measuring range	600 - 8.000 mm
design	cylindrical M30
operating mode	IO-Link proximity switch/reflective mode reflective barrier window mode
particularities	high chemical resistance stainless steel version display IO-Link version 1.1 Smart Sensor Profile UL listed

## ultrasonic-specific

means of measurement	echo propagation time measurement
transducer frequency	80 kHz
blind zone	600 mm
operating range	6,000 mm
maximum range	8,000 mm
resolution	1 mm
reproducibility	± 0.15 %
accuracy	± 1 % (temperature drift internally compensated)

## electrical data

operating voltage $U_b$	9 - 30 V d.c., reverse polarity protection
voltage ripple	± 10 %
no-load current consumption	≤ 80 mA
type of connection	5-pin M12 initiator plug

crm+600/F/TC/E



# crm+600/F/TC/E

## outputs

output 1	Push-Pull, $U_B=3\text{ V}$ , $-U_B+3\text{ V}$ , $I_{\max} = 100\text{ mA}$ Schließer/Öffner einstellbar, kurzschlussfest
switching hysteresis	100 mm
switching frequency	3 Hz
response time	240 ms
delay prior to availability	< 450 ms

## inputs

input 1	com input synchronisation input
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## IO-Link

product name	crm+600/F/TC/E
product ID	29580
SIO mode support	yes
COM mode	COM2 (38,4 kBaud)
min. cycle time	60,8 ms
format of process data	4 Byte
content of process data	Bit 0: initial state Pin 4; Bit 1: initial state Pin 2; Bit 8-15: scale (Int. 8); Bit 16-31: measured value (Int. 16)
ISDU paramter	Identification, measuring configuration, switched output, filter, temperature compensation, operation
system commands	SP1 Teach-in, SP2 Teach-in, factory settings
Smart Sensor Profile	yes
IODD version	IODD version 1.1

## housing

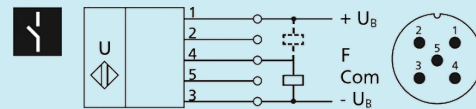
material	stainless steel, plastic parts: PBT, TPU
ultrasonic transducer	coated with PEEK film, PTFE O-ring
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	270 g
further versions	cable connection (on request)

# crm+600/F/TC/E

## technical features/characteristics

temperature compensation	yes
controls	2 push-buttons + LED display (TouchControl)
scope for settings	Teach-in and numeric configuration via TouchControl LCA-2 with LinkControl IO-Link
Synchronisation	yes
multiplex	yes
indicators	3-digit LED display, 2 x three-colour LED
particularities	high chemical resistance stainless steel version display IO-Link version 1.1 Smart Sensor Profile UL listed

## pin assignment



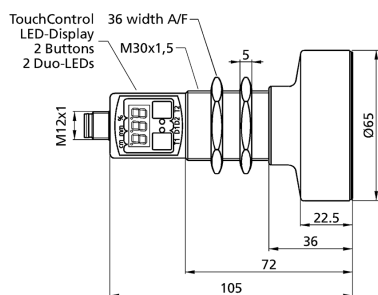
order no.

**crm+600/F/TC/E**

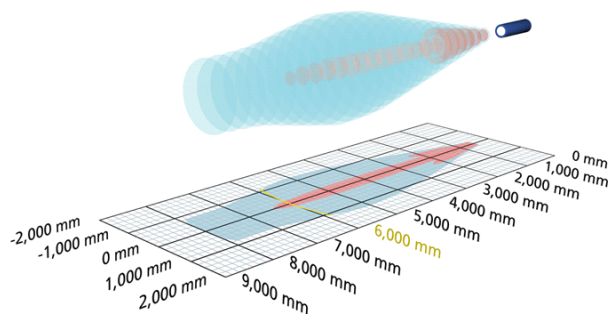
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# crm+600/D/TC/E

## scale drawing



## detection zone



1 x pnp



### measuring range

600 - 8.000 mm

### design

cylindrical M30

### operating mode

proximity switch/reflective mode  
reflective barrier  
window mode

### particularities

high chemical resistance  
stainless steel version  
display

## ultrasonic-specific

### means of measurement

echo propagation time measurement

### transducer frequency

80 kHz

### blind zone

600 mm

### operating range

6,000 mm

### maximum range

8,000 mm

### resolution

0.18 mm

### reproducibility

± 0.15 %

### accuracy

± 1 % (temperature drift internally compensated)

## electrical data

### operating voltage $U_B$

9 - 30 V d.c., reverse polarity protection

### voltage ripple

± 10 %

### no-load current consumption

≤ 80 mA

### type of connection

5-pin M12 initiator plug

# crm+600/D/TC/E

## outputs

output 1	switching output pnp: $I_{\max} = 200 \text{ mA}$ ( $U_B = 2V$ ) NOC/NCC adjustable, short-circuit-proof
switching hysteresis	100 mm
switching frequency	3 Hz
response time	240 ms
delay prior to availability	< 450 ms

## inputs

input 1	com input synchronisation input
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## housing

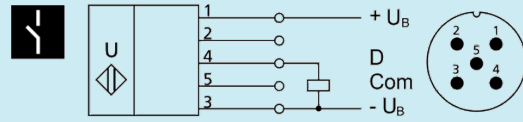
material	stainless steel, plastic parts: PBT, TPU
ultrasonic transducer	coated with PEEK film, PTFE O-ring
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	270 g
further versions	cable connection (on request)

## technical features/characteristics

temperature compensation	yes
controls	2 push-buttons + LED display (TouchControl)
scope for settings	Teach-in and numeric configuration via TouchControl LCA-2 with LinkControl
Synchronisation	yes
multiplex	yes
indicators	3-digit LED display, 2 x three-colour LED
particularities	high chemical resistance stainless steel version display

# crm+600/D/TC/E

## pin assignment



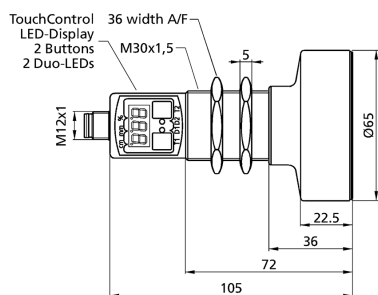
order no.

crm+600/D/TC/E

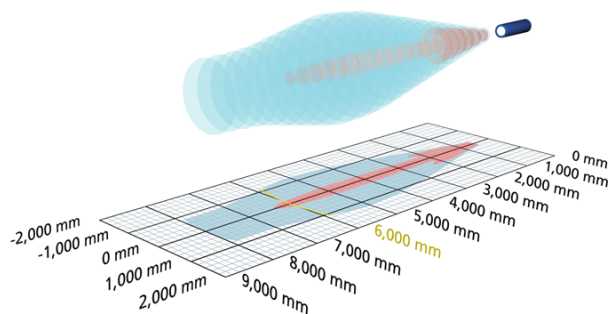
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# crm+600/DD/TC/E

## scale drawing



## detection zone



2 x pnp



8,000 mm

### measuring range

600 - 8.000 mm

### design

cylindrical M30

### operating mode

proximity switch/reflective mode  
reflective barrier  
window mode

### particularities

high chemical resistance  
stainless steel version  
display

## ultrasonic-specific

### means of measurement

echo propagation time measurement

### transducer frequency

80 kHz

### blind zone

600 mm

### operating range

6,000 mm

### maximum range

8,000 mm

### resolution

0.18 mm

### reproducibility

± 0.15 %

### accuracy

± 1 % (temperature drift internally compensated)

## electrical data

### operating voltage $U_B$

9 - 30 V d.c., reverse polarity protection

### voltage ripple

± 10 %

### no-load current consumption

≤ 80 mA

### type of connection

5-pin M12 initiator plug

# crm+600/DD/TC/E

## outputs

output 1	switching output pnp: $I_{\max} = 200 \text{ mA}$ ( $U_B - 2V$ ) NOC/NCC adjustable, short-circuit-proof
output 2	switching output pnp: $I_{\max} = 200 \text{ mA}$ ( $U_B - 2V$ ) NOC/NCC adjustable, short-circuit-proof
switching hysteresis	100 mm
switching frequency	3 Hz
response time	240 ms
delay prior to availability	< 450 ms

## inputs

input 1	com input synchronisation input
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## housing

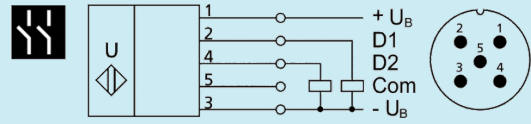
material	stainless steel, plastic parts: PBT, TPU
ultrasonic transducer	coated with PEEK film, PTFE O-ring
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	270 g
further versions	cable connection (on request)

## technical features/characteristics

temperature compensation	yes
controls	2 push-buttons + LED display (TouchControl)
scope for settings	Teach-in and numeric configuration via TouchControl LCA-2 with LinkControl
Synchronisation	yes
multiplex	yes
indicators	3-digit LED display, 2 x three-colour LED
particularities	high chemical resistance stainless steel version display

# crm+600/DD/TC/E

## pin assignment



order no.

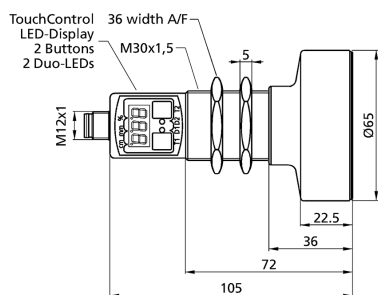
crm+600/DD/TC/E

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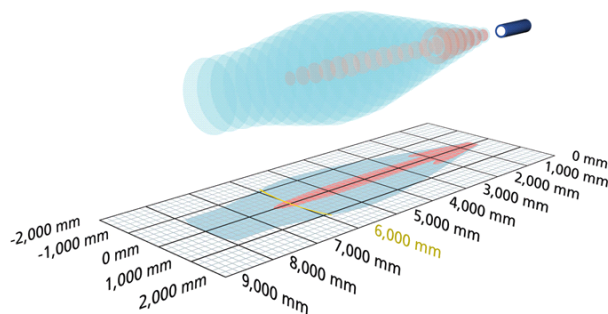


# crm+600/IU/TC/E

## scale drawing



## detection zone



1 x analogue 4-20 mA + 0-10 V



8,000 mm

measuring range	600 - 8.000 mm
design	cylindrical M30
operating mode	analogue distance measurements
particularities	high chemical resistance stainless steel version display

## ultrasonic-specific

means of measurement	echo propagation time measurement
transducer frequency	80 kHz
blind zone	600 mm
operating range	6,000 mm
maximum range	8,000 mm
resolution	0.18 mm
reproducibility	± 0.15 %
accuracy	± 1 % (temperature drift internally compensated)

## electrical data

operating voltage $U_b$	9 - 30 V d.c., reverse polarity protection
voltage ripple	± 10 %
no-load current consumption	≤ 80 mA
type of connection	5-pin M12 initiator plug

# crm+600/IU/TC/E

## outputs

output 1	analogue output current: 4-20 mA / voltage: 0-10 V (at $U_B \geq 15$ V), short-circuit-proof switchable rising/falling
response time	240 ms
delay prior to availability	< 450 ms

## inputs

input 1	com input synchronisation input
---------	------------------------------------

## housing

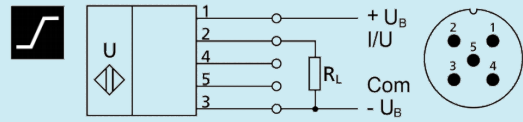
material	stainless steel, plastic parts: PBT, TPU
ultrasonic transducer	coated with PEEK film, PTFE O-ring
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	270 g
further versions	cable connection (on request)

## technical features/characteristics

temperature compensation	yes
controls	2 push-buttons + LED display (TouchControl)
scope for settings	Teach-in and numeric configuration via TouchControl LCA-2 with LinkControl
Synchronisation	yes
multiplex	yes
indicators	3-digit LED display, 2 x three-colour LED
particularities	high chemical resistance stainless steel version display

# crm+600/IU/TC/E

## pin assignment



order no.

crm+600/IU/TC/E

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