RadarRanger® Anti Collision Devices

Radar Scanner CRAT20-150/11ST
extremely wide beam angle
short range
for moving and stationary targets

Official distributor:

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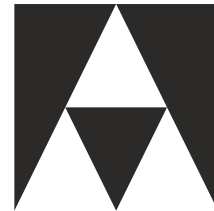74564 Crailsheim
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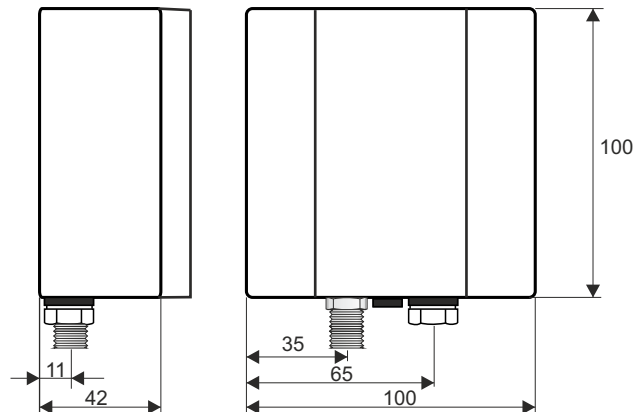Product made by TITZE, Sensor, Germany

Radar Scanner CRAT20-150/11ST
- extremely wide beam angle
- short range
- for moving and stationary targets

PETER - PAUL TITZE
IDEEN IN SENSORIK

Preliminary data sheet

100

35

11

42

65

100

Description

The radar scanner is a FMCW-Radar and works in the frequency range from 24,000 - 24,250 GHz. The antenna characteristics is 150° (±75°) horizontal and 11° (±5,5°) vertical.

The device is able to detect moving and stationary objects up to a distance from 25m. The adjustable distance is in 1m steps from 2 - 16m. The close-up range from 0-1m will not evaluated. In the range from 2-4m it needs a minimum speed from less than 1cm/sec (0,6m/min).

Object detections will be reported by open-collector-outputs. The unit has 3 outputs which can be used for example as slow down or stop features. We can program them to the needed values of each application. The 3 outputs are allocated at a 5-pin RSF4 standard connector.

This device was especially developed for the anti-collison and start up protection in the field of fast moving marine port cranes, for example Straddle Carrier, RTGC, RMGC, STS and OHBC.

Vantages:
- extremely wide detection range
- insensibility against environmental conditions
- wide temperatur range
- high class of protection
- heavy duty enclosure

Special brackets from the accessories program are helpful for easy mounting.

Because of their physical properties, radar scanner devices must NOT be used for personal safety or EMERGENCY OFF functions.
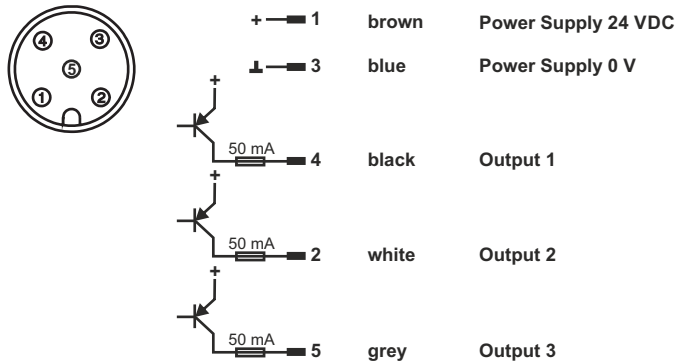
Specification

Mechanical Design:

Weight	approx. 650 g
Material	Lower Housing Section: ALg, black anodized
	Housing Cover: POM-Plastic black colored
Protection Class	IP 67
Housing Dimensions	100 x 100 x 42 mm
Mounting Drillings/Housing Back Side	4 X M4-Tread, 10mm deep,
	quadratically arranged: 82 x 82 mm

Electrical Design:

Supply Voltage	10VDC....30VDC
Current Consumption	typ. 130 mA, plus current for the Open-Collector-Outputs
Output	3 Open-Collector-Outputs with each 50mA
Connection	5-pin Connector M12x1, RSF4 compatible
Sending Frequency	24.000 .... 24.250 GHz
Transmitting Power	< 20dBm (EIRP) max.
Antenna Charakteristics	150° (±75°) horizontal and 11° (±5,5°) vertical
Distance Detection	1m .... Threshold (in 1m steps from 2 - 16m adjustable)
	0 - 1m will not be evaluated,
	2 - 4m minimum speed less 1cm/sec (0,6m/min) required
	4 -16m works also with stationary targets
Response Time	< 50 ms
Hold Time of the Outputs	approx. 1 sec
Readiness delay after power on	approx. 1 sec
Operating Temperature	-40 .... +85 °C
Storage Temperature	-40 .... +85 °C

Connection Diagramm:

| + —■ 1	brown	Power Supply 24 VDC
⊥—■ 3	blue	Power Supply 0 V
50 mA ■ 4	black	Output 1
50 mA ■ 2	white	Output 2
50 mA ■ 5	grey	Output 3

Standard Conformity:

EU Directives:
Low Voltage Directive No.: 2014/36/EU:2014-02
EMC Directive No.: 2014/30/EU:2014-02
Radio Equipment Directive No.: 2014/53/EU:2014-04
RoHS Directive No.: 2011/65/EU:2011-06
Radio Standard ETSI EN 300440

Standards:
DIN EN 61000-6-2: 2016-05, DIN EN 61000-6-4:2020-09
DIN EN IEC 63000: 2019-05, DIN EN 55011:2022-05
DIN EN 301489-51:2020-02,
ETSI EN 300 440 V2.1.1 (2017-01)
DIN EN 61326-1:2013-07, DIN EN IEC 62311:2020-12
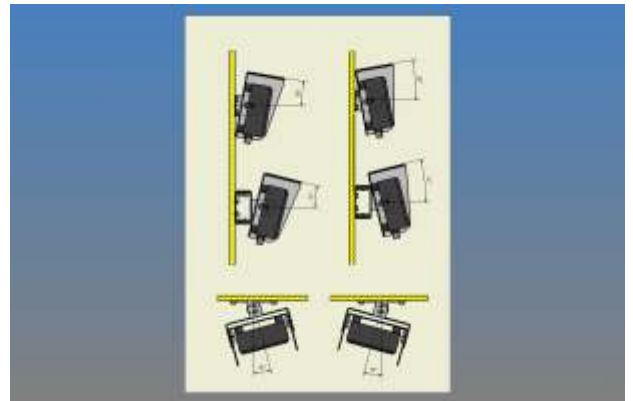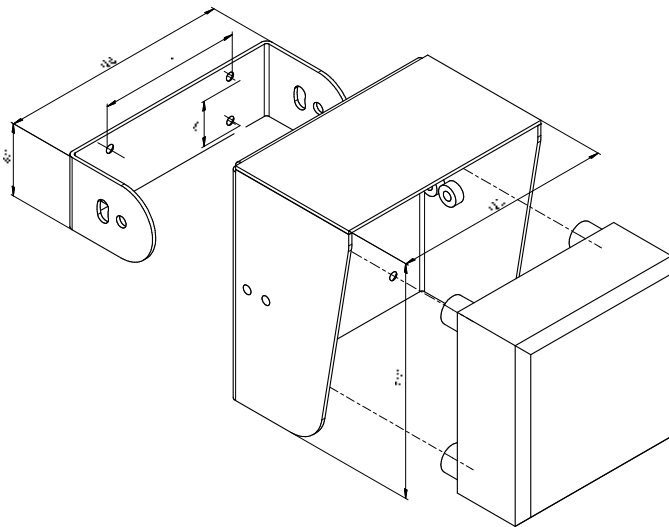DIN EN IEC 62368-1:2021-05

Antenna Characteristics:

Measurement Range Diameter by 150x11 horizontal view (m), sensitivity high 15dB, target metal plate 50x50cm

Distance to Radarscanner (m)
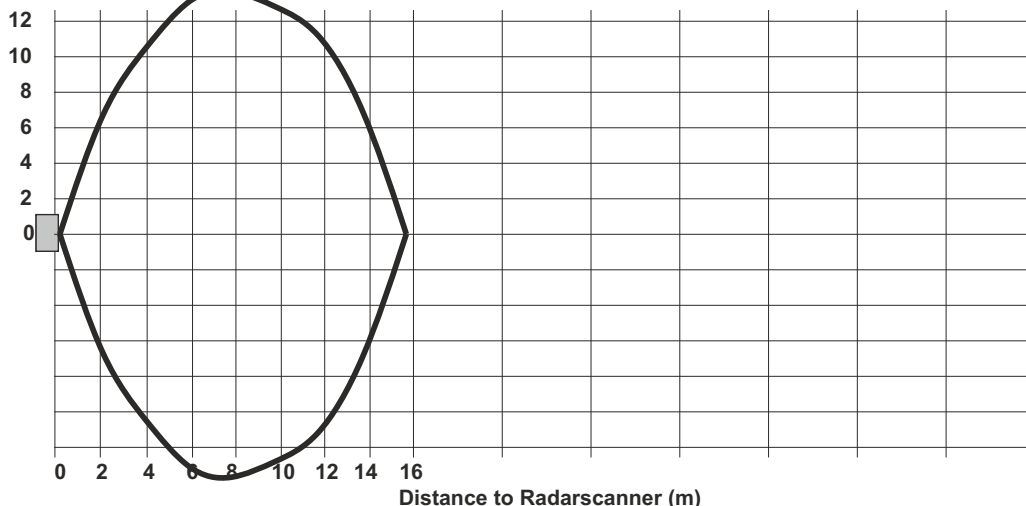
Small-Sized Bracket:

A-A

10°

12   76

A

130

25

10°

80   ⌀6,5

128
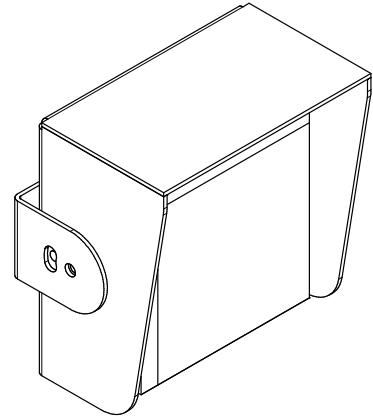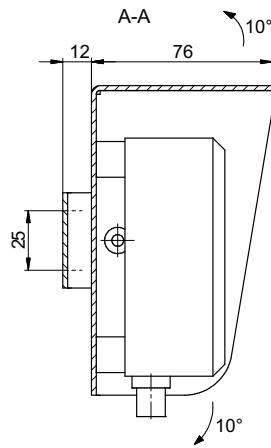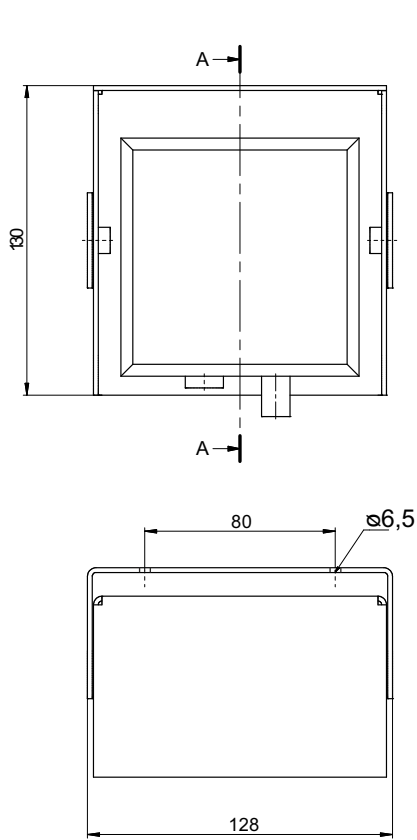
Material: 1.4301
Material press nuts: stainless steel
Material thickness: 2mm
Weight: approx 0,8Kg

4x stud mounts   4x flat head screw included in each delivery with RadarRanger

Cordsets for Scanner Type:

4/5-pin straight plug **with** LED   different cable length avaiable, please inquire!

4/5-pin straight plug **without** LED   different cable length avaiable, please inquire!

Commissioning Tool 1 (all plug connectors)

RadarRanger

Part 1

Part 2

Part 3

Part 5

Supply Cable, not included

Commisioning Tool 1

Part 1 = Cordset male/female 3,0m PUR
Part 2 = T-Splitter
Part 3 = Cordset male/female 0,3m PUR
Part 5 = Signal-Tower with 4 LED
Part 7 = Bracket 1 for Signal-Tower
Part 10 = Flat Magnet

Part 7   Part 10

Configuration Box:

for programming the RadarRanger Scanner types, incl.
Software, Limosa connector for Radar connection
SUB-D 9-pin connector for connection to RS232 PC

Laser Alignment System:

for easy and optimally alignment for all radar system

!!Attention, please use only pointer with parallel laser beam

!!The Laserpointer is not in the scope of delivery