



RDR 300 Series

FMCW RADAR LEVEL TRANSMITTER



APPLICATIONS

Orion FMCW Radar Level Probe is used for continuous level measuring and volume measuring of liquid and solid materials in open and closed tanks without contact. There is 4 key leak proof keypad and it can show the measured value as level, distance (cm, m) or volume (liter, m3).



FEATURES AND APPLICATION AREA

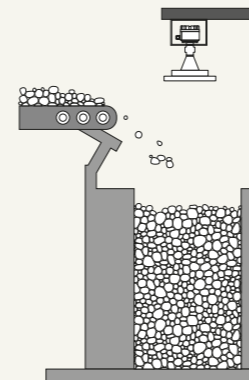
- Water treatment and process technology: Water, waste water etc.
- Food industry: Beverage, milk and milk products
- Chemical and pharmaceutical industry: Oil, gasoline, diesel etc. (PVDF sensor)
- In Building Materials Industry; plaster, lime, fine sand, dolomite, calcite, perlite plaster, cement, rock, coal, pulverised coal dust, etc.
- In Food Industry; fodder, seed, flour, salt, sugar etc.
- In Plastics Industry; plastic granules etc.

ADVANTAGES

- Non-contact FMCW radar technology is especially used in heavy process conditions that require high measurement accuracy.
- The result of the measurement is not affected by the fluctuation of liquid surfaces.
- Process conditions (temperature, humidity, pressure, dust) do not change the measurement results.

FUNCTIONS

Uses FMCW technology instead of measuring time (Pulse). Generates and sends a signal scan with increasing frequency over time. The transmitted signal is reflected by the measured surface. The reflected signal is collected by the antenna. The frequency difference between the transmitted and received signals is directly proportional to the distance between the measured surface and the sensor.



Agricultural Storage



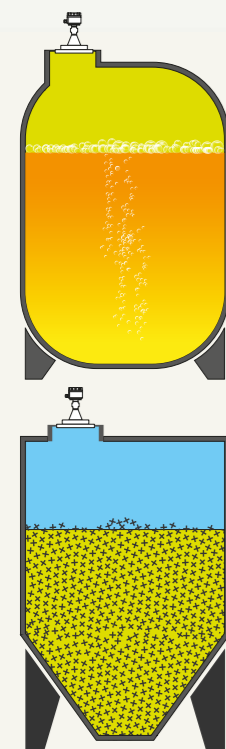
Construction Industry and Mining



Calcite, Sand, Coal Production Facilities



Cement Plants



TECHNICAL DATA

ELECTRICAL SPECIFICATIONS

Connection Terminal	Max. 2 mm ² (AWG 14) cross-sectioned cable inlet
Fitting	PG9
Supply Voltage	ECH3XX- 24V DC ±30% max. 4 W
Control Relay	2 pcs changeover NO contact AC max. 250 V, 1A
Analog Output	RDR3XX- 4-20 mA isolated (2,5 kV) 16bit
Serial Port	RS485 MODBUS RTU (38400 bps max)
Protection Class	A: IP68 (when cover is full closed and fitting is exactly fastened by using cable having thickness of 4-8mm)

MEKANİK ÖZELLİKLER

Housing	A: Aluminum machining
Antenna	PP: Polypropylene PVDF: polyvinylidene fluoride
Process Connection	RDR3XX - DN 100, PN16 Flange
Housing Surface	Electrostatic powder paint on alodine coating
Weight	RDRXXA: 1,85 kg

WORKING CONDITIONS

Ambient Temperature	-20°C, - +60°C
Process Temperature	-20°C, - +80°C
Process Pressure	-1, +3 Bar
Resolution	Maksimum 1 cm
Measurement Freq.	Max: 50 Hz. (1 sn.de 50 adet)
linearity	% 0,2
Max. Measuring	RDR320 - 20 m, RDR350 - 50 m
Min. Measuring	RDR3XX - 50 cm
Sensor Frequency	RDR3XX - 24 Ghz
Beam width	12° x 18° - 3 dB
Vibration	5-500 Hz 3G RMS random vibration EC-60068-2-64



Flange	ØD	Øk	Ød	Number of hole
DN 100 PN16	220	180	18	8x45° (=360°)

ORDERING CODES

RDR320A-24DC FMCW RADAR LEVEL TRANSMITTER & CONTROLLER
Supply Voltage: 24VDC, Signal Out: Analogue 4-20mA & 2 NO Relay Out 250V/1A & Modbus RS485, Accuracy: +/- 1 cm or +/- 0,2 % of set measuring range, MaxMeasurement Distance: 20m, Antenna Material: PP, Process Connection: DN100, PN16, Process Temperature: -20°C to 80°C, Process pressure: 3Bar, Ambient Temperature: -20°C to 80°C, Sensor Protection class: IP68, Transmitter Protection Class: IP68, Transmitter Housing: Aluminum.

RDR350A-24DC FMCW RADAR LEVEL TRANSMITTER & CONTROLLER
Supply Voltage: 24VDC, Signal Out: Analogue 4-20mA & 2 NO Relay Out 250V/1A & Modbus RS485, Accuracy: +/- 1 cm or +/- 0,2 % of set measuring range, MaxMeasurement Distance: 50m, Antenna Material: PP, Process Connection: DN100, PN16, Process Temperature: -20°C to 80°C, Process pressure: 3Bar, Ambient Temperature: -20°C to 80°C, Sensor Protection class: IP68, Transmitter Protection Class: IP68, Transmitter Housing: Aluminum.

RDR3XX-PVDF PVDF Antenna material option Add on -PVDF Operating Temperature: -40°C to 90°C

RDR3XX-Flange Flange montage adapter DN100 PN16 POMC Delrin®

RDR3XX-Strap Mounting strap SS304

COMPLIANCE TO APPLICABLE NORMS

CE COMPLIANCE

- EN 61000-6-4:2001 Generic emission standard. Industrial environments.
- EN 61000-6-2:2005 Generic immunity standard. Industrial environment.
- EN 61010-1:2001 Safety requirements for electrical equipment for measurement, control, and laboratory use.

