

Model RLT300 series

Radar Level Transmitter
Frequency 26GHz/Measuring range up to 70m

Materontek
Sensing and Internet of Things

The RLT300 Series is radar level transmitter designed for measuring the changing level of liquids, slurries and bulk solids in tanks, bins and silos. Operating at either 6.8GHz or 26GHz the RLT series radar level transmitter products will provide non-contact continuous level measurement with high accuracy. The antenna of radar level instrument transmits a very narrow microwave pulse which propagates at the speed of light in space. When meeting the dielectric surface to be measured, part of its energy is reflected and received by the same antenna. The time interval of transmitting and receiving pulses is proportional to the distance between antenna and dielectric surface to be measured, and therefore the distance between antenna and dielectric surface to be measured can be calculated.

Technology:

Radar sensor

Applications:

Liquids and bulk solids in small vessels level measurement

Features:

- Non-contact liquid level measurement
- Accuracy as good as $\pm 5\text{mm}$
- 4-20mA output, Modbus RS485, HART available
- Measuring range up to 70m
- 304SS, 316SS and PTFE coated wetted parts
- Frequency 26 GHz
- Process connection threaded or flanged
- Process Connection: Thread, flange

Performance Specifications



Model	RLT300-10	RLT300-11	RLT300-12
Applications	Corrosive liquid	Liquid, slurry and water treatment	Continuous monitoring of solids
Type	Radar Level Transmitter, Frequency 26 GHz	Radar Level Transmitter, Frequency 26 GHz	Radar Level Transmitter, Frequency 26 GHz
Measurement Type	Non-contacting	Non-contacting	Non-contacting
Measuring Range	20m	30m	70m
Accuracy	$\pm 5\text{mm}$	$\pm 5\text{mm}$	$\pm 15\text{mm}$
Output option		(4~20)mA /Two-wire (4~20)mA / Four-wire (4~20)mA/HART/Two-wire (4~20)mA/HART/Four-wire	
Power Supply	24VDC, AC220V	24VDC, AC220V	24VDC, AC220V
Process Temp.	-40~+120°C	-40~+250°C	-40~+250°C
Process Pressure	-1~3bar	-1~40bar	Atmospheric pressure
Protection Class	IP67	IP67	IP67
Process Mount	G1"1/2 A, 1"1/2 NPT, Flange DN50, DN80, DN100	G1"1/2 A, 1"1/2 NPT, Flange DN50, DN80, DN100	G1"1/2 A, 1"1/2 NPT, Flange, DN80, DN100, ..., DN250
Electrical Connection	M20x1.5 or 1/2" NPT	M20x1.5 or 1/2" NPT	M20x1.5 or 1/2" NPT
Display	Yes	Yes	Yes
Material of sensor	PP	Stainless steel	Stainless steel
Antenna type/material	Sealed horn/PTFE	With horn antenna $\varnothing 46\text{mm}$ & $\varnothing 76\text{mm}$ & $\varnothing 96\text{mm}/304\text{SS}$	With horn antenna $\varnothing 76\text{mm}$ & $\varnothing 96\text{mm}$ & $\varnothing 121\text{mm}/304\text{SS}$

Notes: The listed specifications and dimensions are subject to change without prior notice

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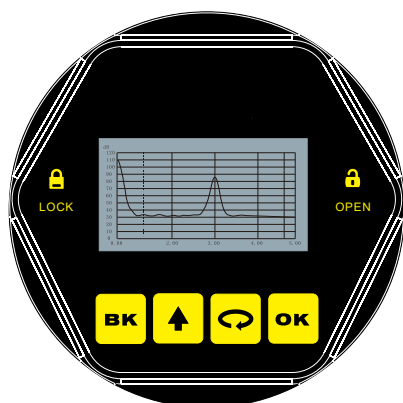
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Model	RLT300-13	RLT300-14	RLT300-15
Applications	Solid powder, solid block, strong dust environment	Solid block, solid particle	Hygienic liquid
Type	Radar Level Transmitter, Frequency 26 GHz	Radar Level Transmitter, Frequency 26 GHz	Radar Level Transmitter, Frequency 26 GHz
Measurement Type	Non-contacting	Non-contacting	Non-contacting
Measuring Range	70m	30m	30m
Accuracy	±5mm	±5mm	±5mm
Output option	(4~20)mA /Two-wire (4~20)mA / Four-wire (4~20)mA/HART/Two-wire (4~20)mA/HART/Four-wire		
Power Supply	24VDC, AC220V	24VDC, AC220V	24VDC, AC220V
Process Temp.	-40~+120°C	-40~+250°C	-40~+150°C
Process Pressure	Atmospheric pressure	Atmospheric pressure	Atmospheric pressure
Protection Class	IP67	IP67	IP67
Process Mount	G1"1/2 A, 1"1/2 NPT, Flange DN50, DN80, DN100,..DN250	G1"1/2 A, 1"1/2 NPT, Flange DN50, DN80, DN100,..DN250	DN80, DN100,.., DN250
Electrical Connection	M20x1.5 or 1/2" NPT	M20x1.5 or 1/2" NPT	M20x1.5 or 1/2" NPT
Display	Yes	Yes	Yes
Material of sensor	PP	Stainless steel	Stainless steel
Antenna type/material	Parabolic antenna Φ196mm & Φ242mm / 304SS	With horn antenna ø76mm & ø96mm & ø121mm/304SS	With horn antenna ø46mm & ø76mm & ø96mm/304SS

Display/Adjustment Modules



-  Keypad
 - Enter programming mode;
 - Confirm programming options;
 - Confirm modifications to parameters.
-  Keypad
 - Choose programming options;
 - Choose the digit of parameters to edit
 - Display the contents of parameters.
-  Keypad
 - Modify parameter values.
 - Choose display mode
-  Keypad
 - Programming mode exit;
 - Return to higher menu level.
 - Shortcut
 - Display Echo wave

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Ordering Information

Model	RLT300-10	RLT300-10 radar level sensor
Approval	P	Standard (Non-explosion-proof)
	I	Ex ia IIC T6
	D	Ex d IIC T4
Shape of Antenna/Material Process/Material	A	Sealed horn/PTFE/(-40~120) °C
	/	/
Electronic Component	B	(4~20)mA/Two-wire/24VD
	C	(4~20)mA/HART/Two-wire/24VDC
	D	(4~20)mA/Four-wire/220VAC
	R	(4~20)mA/Four-wire/24VDC
Housing/Protection Level	A	Aluminum/IP67
	B	Stainless Steel/IP67
Process Connection	M1	Thread G1½A
	M2	Thread 1½NPT
	FL	Flange DN50/PTFE
	DJ	Special design
Antenna Extension	L1	100mm
	L2	200mm
Cable Entry	M	M20x1.5
	N	½NPT
Display/Programming	A	Yes
	X	No
For example		RLT300-10-P-A-B-A-M1-L1-M-A

Model	RLT300-11	RLT300-11 radar level sensor
Approval	P	Standard (Non-explosion-proof)
	I	Ex ia IIC T6
	D	Ex d IIC T4
Shape of Antenna/Material Process/Material	H1	Horn Antenna Φ76mm/Stainless Steel 316L
	H2	Horn Antenna Φ96mm/Stainless Steel 316L
	H3	Horn Antenna Φ121mm/Stainless Steel 316L
Electronic Component	B	(4~20)mA/Two-wire/24VDC
	C	(4~20)mA/HART/Two-wire/24VDC
	D	(4~20)mA/Four-wire/220VAC
	R	(4~20)mA/Four-wire/24VDC
Housing/Protection Level	A	Aluminum/IP67
	B	Stainless Steel/IP67
Process Connection	M1	Thread G1½A
	M2	Thread 1½NPT
	FL	Flange DN50,DN80,DN100/SS
	DJ	Special design
Cable Entry	M	M20x1.5
	N	½NPT
Display/Programming	A	Yes
	X	No
For example		RLT300-11-P-H1-B-A-M1-L1-M-A

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Model	RLT300-12	RLT300-12 radar level sensor
Approval	P	Standard (Non-explosion-proof)
	I	Ex ia IIC T6
	D	Ex d IIC T4
Shape of Antenna/Material Process/Material	H1	Horn Antenna Φ 76mm/Stainless Steel 316L
	H2	Horn Antenna Φ 96mm/Stainless Steel 316L
	H3	Horn Antenna Φ 121mm/Stainless Steel 316L
	H4	Horn Antenna Φ 196mm/Stainless Steel 316L
Electronic Component	B	(4~20)mA/Two-wire/24VDC
	C	(4~20)mA/HART/Two-wire/24VDC
	D	(4~20)mA/Four-wire/220VAC
	R	(4~20)mA/Four-wire/24VDC
Housing/Protection Level	A	Aluminum/IP67
	B	Stainless Steel/IP67
Process Connection	M1	Thread G1½A
	M2	Thread 1½NPT
	FL	Flange DN80,DN100,...,DN250/SS
	FLU	Flange DN80,DN100,...,DN250/SS with Universal joint
	DJ	Special design
Cable Entry	M	M20x1.5
	N	½NPT
Display/Programming	A	Yes
	X	No
For example		RLT300-12-P-H1-B-A-M1-L1-M-A

Model	RLT300-13	RLT300-13 radar level sensor
Approval	P	Standard (Non-explosion-proof)
	I	Ex ia IIC T6
	D	Ex d IIC T4
Shape of Antenna/Material Process/Material	H1	Parabolic antenna Φ 196mm/Stainless Steel 304
	H2	Parabolic antenna Φ 242mm/Stainless Steel 304
Electronic Component	B	(4~20)mA/Two-wire/24VDC
	C	(4~20)mA/HART/Two-wire/24VDC
	D	(4~20)mA/Four-wire/220VAC
	R	(4~20)mA/Four-wire/24VDC
Housing/Protection Level	A	Aluminum/IP67
	B	Stainless Steel/IP67
Process Connection	M1	Thread G1½A
	M2	Thread 1½NPT
	FL	Flange DN80,DN100,...,DN250/SS
	FLU	Flange DN80,DN100,...,DN250/SS with Universal joint
	DJ	Special design
Cable Entry	M	M20x1.5
	N	½NPT
Display/Programming	A	Yes
	X	No
For example		RLT300-13-P-H1-B-A-M1-L1-M-A

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Model	RLT300-14	RLT300-14 radar level sensor
Approval	P	Standard (Non-explosion-proof)
	I	Ex ia IIC T6
	D	Ex d IIC T4
Shape of Antenna/Material Process/Material	H1	Horn Antenna Φ 76mm/Stainless Steel 316L
	H2	Horn Antenna Φ 96mm/Stainless Steel 316L
	H3	Horn Antenna Φ 121mm/Stainless Steel 316L
Electronic Component	B	(4~20)mA/Two-wire/24VDC
	C	(4~20)mA/HART/Two-wire/24VDC
	D	(4~20)mA/Four-wire/220VAC
	R	(4~20)mA/Four-wire/24VDC
Housing/Protection Level	A	Aluminum/IP67
	B	Stainless Steel/IP67
Process Connection	M1	Thread G1½A
	M2	Thread 1½NPT
	FL	Flange DN50, DN80, DN100/SS
	DJ	Special design
Cable Entry	M	M20x1.5
	N	½NPT
Display/Programming	A	Yes
	X	No
For example RLT300-14-P-H1-B-A-M1-L1-M-A		

Model	RLT300-15	RLT300-15 radar level sensor
Approval	P	Standard (Non-explosion-proof)
	I	Ex ia IIC T6
	D	Ex d IIC T4
Shape of Antenna/Material Process/Material	H1	Horn Antenna Φ 46mm/Stainless Steel 316L
	H2	Horn Antenna Φ 76mm/Stainless Steel 316L
	H3	Horn Antenna Φ 96mm/Stainless Steel 316L
Electronic Component	B	(4~20)mA/Two-wire/24VDC
	C	(4~20)mA/HART/Two-wire/24VDC
	D	(4~20)mA/Four-wire/220VAC
	R	(4~20)mA/Four-wire/24VDC
Housing/Protection Level	A	Aluminum/IP67
	B	Stainless Steel/IP67
Process Connection	M1	Thread G1½A
	M2	Thread 1½NPT
	FL	Flange DN50, DN80, DN100, DN150, DN200, DN250/SS
	DJ	Special design
Cable Entry	M	M20x1.5
	N	½NPT
Display/Programming	A	Yes
	X	No
For example RLT300-15-P-H1-B-A-M1-L1-M-A		