

# ARLM-54

# Dinel®

## ANTENNA RADAR LEVEL METER

Designed for reliable level measurement of a wide variety of liquids and pasty substances



**HART**  
COMMUNICATION PROTOCOL



- Non-contact antenna radar level meter
- Measuring range up to 8 m or up to 20 m
- Variable installation thanks to the possibility of connection via the bottom or top thread
- Intelligent numerical signal processing with elimination of false reflections
- Connection via two-core cable
- Option of choosing standard cable gland or gland for protective hose
- Current output (4 ... 20 mA) with HART® protocol
- Measurement independent of temperature and pressure of the atmosphere above the surface
- Measurement also possible in aggressive vapors
- High degree of protection IP68

### TECHNICAL SPECIFICATIONS

working environment	non-explosion environment
supply voltage	18 ... 34 V DC
output type	current 4 ... 20 mA with HART® communication (limit values 3,9 - 20,5 mA)
current consumption	4 ... 20 mA / max. 22 mA
basic measurement accuracy	3 mm (distance 1 m ... 8/20 m) 10 mm (distance 0.3 m ... 1 m)
current output error	max. 80 µA
resolution	0,1 mm
maximum range	8 m, 20 m
dead zone	30 cm
adjustable measuring range (SPAN)	min. 200 mm
function principle	FMCW
operating temperature range	-30 ... +70 °C
maximum operating overpressure	2 bar
measuring frequency	25 GHz (K-Band)
measurement sensitivity	3 levels
damping	1 ... 99 sec
status signaling (echo dropout)	3,75 mA; 4 mA; 20 mA; 22 mA; NO CHANGE
time of the first measurement from the start of the power supply	20 sec
maximum load resistance at	U=24 V R=270 Ω* U=22 V R=180 Ω U=20 V R=90 Ω
protection class	IP 68
cable	PVC 2 x 0,75 mm <sup>2</sup>

\* 250Ω HART® resistor included

# BASIC FEATURES AND USE

Non-contact radar level meters with an antenna are suitable for continuous level measurement at medium and longer distances. They can be used both in various closed tanks, containers, in semi-open sumps, and in open space. Their use is suitable where their advantages are fully realized:

1. non-contact measurement
2. independence of measurement on temperature and atmospheric pressure above the surface
3. possibility of measurement even in vacuum
4. possibility of measurement even in aggressive vapors
5. measurement is independent of medium parameters

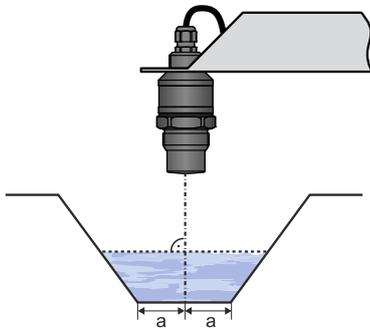
The ARLM-54 radar level meter operates on the FMCW (frequency modulated continuous wave) principle with a frequency of 25 GHz (K-Band).

The level meter is equipped with a compact covered funnel antenna. The antenna cover prevents dirt, vapors and gases from penetrating the antenna.

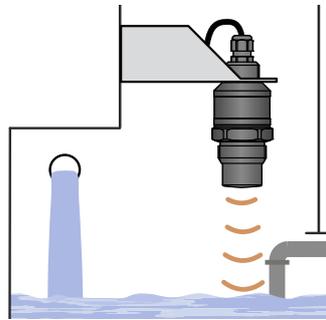
The ARLM-54 is designed for measuring the level of liquid or pasty substances.

The level meter is two-wire with a current output of 4 ... 20 mA with HART® communication. Measuring range 0.3 ... 8 m or 0.3 ... 20 m.

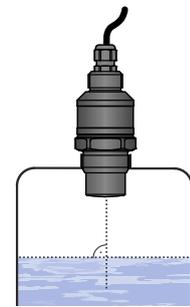
## USAGE



*Installation in the gutter*



*Recommended installation of the ARLM-54 level gauge in the tank through the top thread*



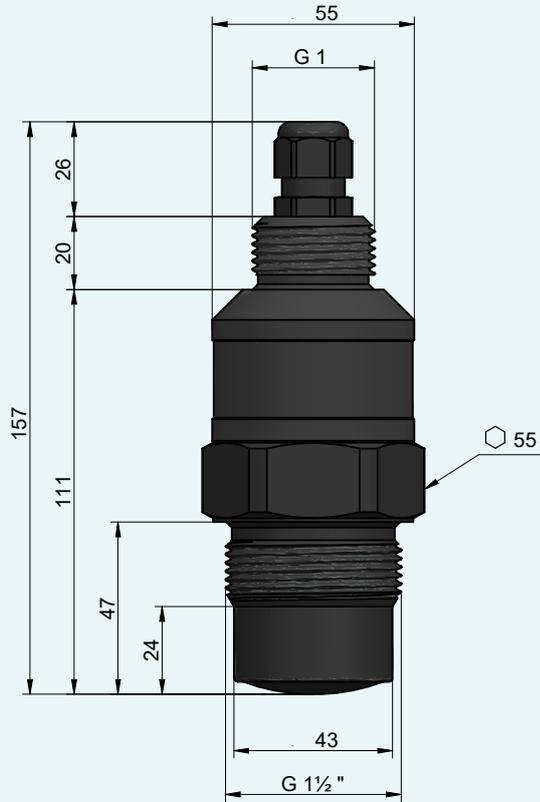
*Recommended installation of the ARLM-54 level gauge in the tank using the bottom thread*

## USED MATERIALS

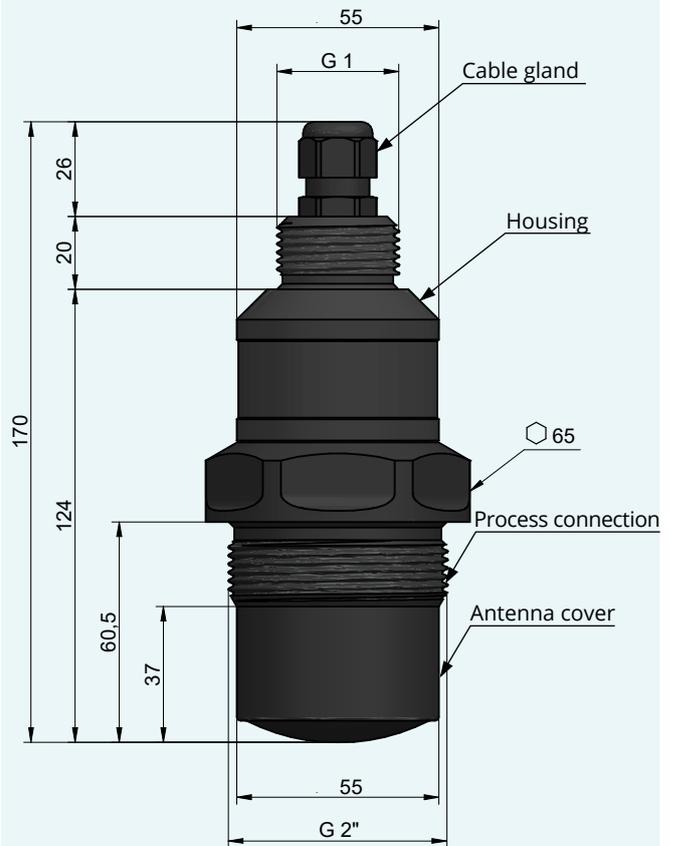
parts of the sensor	standard material
Process connection	plastic PP
Housing	plastic PP + GF30
Cable gland	plastic - PA

# DIMENSIONS

**ARLM-54N-08**

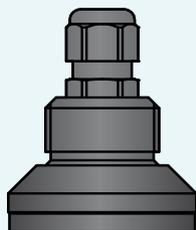


**ARLM-54N-20**

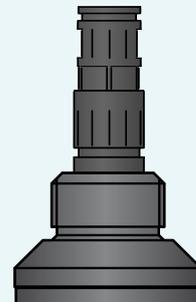


# ELECTRICAL CONNECTION

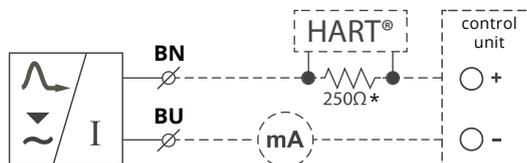
**CABLE GLAND  
M16 X 1,5  
TYPE B**



**CABLE GLAND  
FOR PROTECTIVE HOSE  
TYPE H**



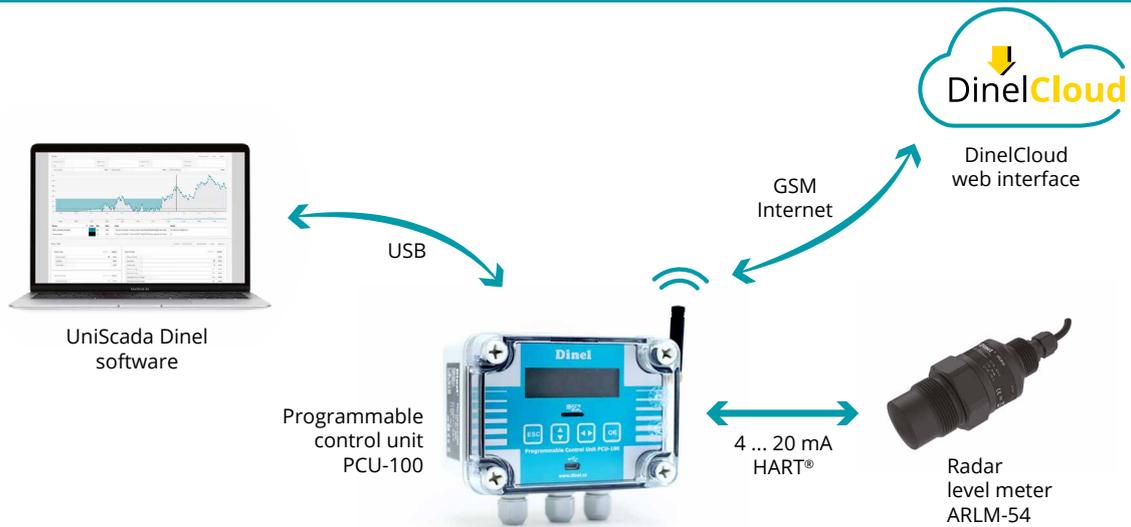
The level gauge is connected to the control (evaluation) device by a hard-wired cable.



Connection diagram of the level gauge with current output ARLM-54

\* When using HART® communication

# CONNECTION TO PCU-100



# CONNECTION TO UHC-01



# ORDER CODE

ARLM-54

## PERFORMANCE

**N** non-explosive enviroments

## MAXIMUM RANGE

**08** 0,3 ... 8 m  
**20** 0,3 ... 20 m

## PROCESS CONNECTION

**G1½** pipe thread G1½" (version 08)  
**G2** pipe thread G2" (version 20)

## OUTPUT TYPE

**I** current output

## ELECTRICAL CONNECTION

**B** short cable gland  
**H** plastic cable gland for protective hose

## CABLE

**K** cable length in meters

ARLM-54 N - 20 - G2 - I - B - K 5

EXAMPLE OF CODING

# RECOMMENDED EVALUATION AND POWER SUPPLY UNIT

power supply of sensors, converting their status to power contact and remote parameterization	at extra cost	PCU-100	
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## ACCESSORIES

extendable bracket	at extra cost	VKD	
2x EPDM gasket (o-ring)	included in the price	Ø30 x 3,5 mm Ø44 x 4 (pro G1½) Ø54 x 4 (pro G2)	
converter from USB to HART®	at extra cost	UHC-01	
plastic fixing nuts	at extra cost	PUM-G1 PUM-G1½ PUM-G2	
stainless steel or steel sleeves	at extra cost	NN-G1 ON-G1 NN-G1½ ON-G1½ NN-G2 ON-G2	
Protective hose (for version with „H“ type outlet)	at extra cost	OH-13	

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version:  
04/2025

