

CPC-U-54



- ultrasonic level meters
- for continuous measurement of liquid, slurry, pastes and bulk materials in outdoor applications: rivers, canals, sumps
- remote installation and communication via HART protocol
- variable installation, connection via lower or upper thread
- intelligent numerical signal processing with the elimination of false reflections
- connection using a standard cable gland or a gland for protective hoses
- high degree of protection IP68
- with the help of a horn adapter it is possible to increase the reception of the reflected echo and to measure problematic media (foaming levels, loose materials, etc.)



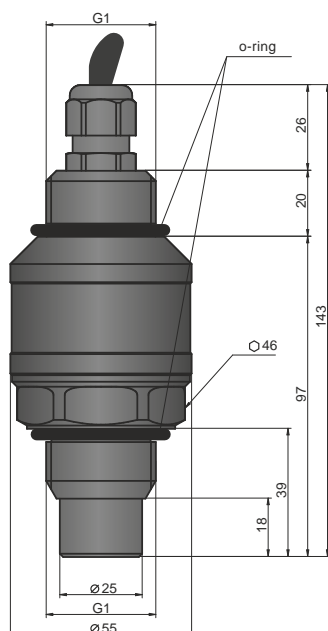
The **CPC-U-54** ultrasonic level meters are compact measurement devices including an electroacoustics converter, central processor unit and display module. Using the electro acoustics converter, the level meters transmit the sequence of ultrasonic pulses that propagate towards the level. The converter receives reflected acoustic waves that are subsequently processed in the electronic module. The intelligent evaluation block filters out interfering signals, compares the cleaned received signal with the false reflection map (e.g. from mixers, ladders, reinforcement etc.) and selects a suitable reflection (echo). Based on the period during which the individual pulses propagate towards the level and back and based on the measured temperature in the tank, the instant distance to the level is calculated. According to the level height, the level meter output is set: current 4 - 20 mA with HART® protocol.

VARIANTS OF LEVEL METERS

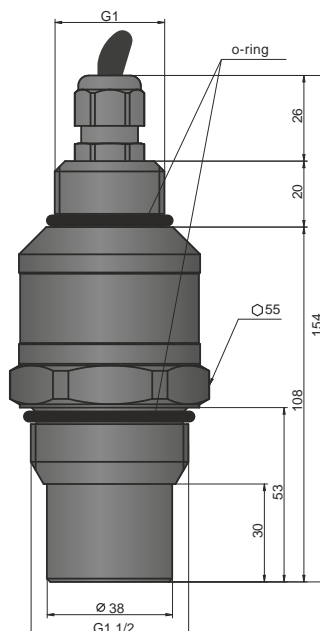
- CPC-U-54N-02** Measuring range from 0.15 m do 2 m, all-plastic performance, PVDF emitter, process connection via G 1" screwing (upper or lower threads)
- CPC-U-54N-06** Measuring range from 0.25 m do 6 m, all-plastic performance, PVDF emitter, process connection via lower G 1½" or upper G 1" screwing
- CPC-U-54N-10** Measuring range from 0.4 m to 10 m, all-plastic performance, PVDF emitter, process connection via lower G 2¼" or upper G 1" screwing. Plastic flange connection can also be selected from the accessories menu.

DIMENSION DRAWINGS

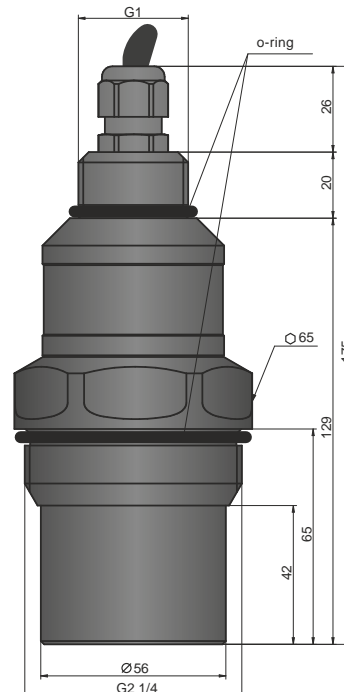
CPC-U-54N_-02

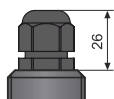


CPC-U-54N_-06

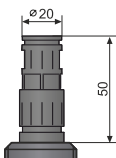


CPC-U-54N_-10





Variant "B" with short
cable terminal PG11



Variant "H" with outlet
for protective conductor

Technical specifications – Level meter		
Measuring range ¹⁾	CPC-U-54N-02 CPC-U-54N-06 CPC-U-54N-10	0,15 ... 2 m 0,25 ... 6 m 0,4 ... 10 m
Adjustable measuring range		min. 200 mm
Supply voltage	CPC-U-54N-__	18 ... 36 V DC
Output	CPC-U-54N-__-_-I	4 ... 20 mA (limit values 3,9 ... 20,5 mA), HART ®
Current consumption	CPC-U-54N-__-_-I	4 ... 20 mA / max. 22 mA
Resolution	CPC-U-54N-02 ; 10 CPC-U-54N-06	< 1 mm < 2 mm
Accuracy (within the total range)		0,15 %
Temperature error		max. 0,04 % / K
Operating frequency	CPC-U-54N-02 CPC-U-54N-06 CPC-U-54N-10	120 kHz 75 kHz 50 kHz
Beamwidth (-3 dB)	CPC-U-54N-02 ; 10 CPC-U-54N-06	10° 14°
Ambient temperature range	CPC-U-54N-02 CPC-U-54N-06 CPC-U-54N-10	-30 ... +70°C -30 ... +70°C -30 ... +60°C
Short-time temperature stress resistance		+90°C / 1 hour
Max. operation overpressure (on transmission level)		0,1 MPa
Sensitivity		3 steps (low – medium – high)
Damping		0 ... 99 s
Measuring period		1 ... 4 s
Rise time		cca. 30 s
Status signaling		echo loss 3,75 mA level in the dead zone ²⁾ 22 mA
Protection class		IP68
Mechanical connection	CPC-U-54N-02 CPC-U-54N-06 CPC-U-54N-10	screwing with thread G 1" (upper or lower threads) screwing with thread G 1½" and upper thread G 1" screwing with thread G 2¼" and upper thread G 1"
Cable	CPC-U-54N-__-_-I	PVC 2 x 0,75 mm ²
Maximal resistance of current output load (U = 24 V DC)	U = 24 V DC U = 22 V DC U = 20 V DC U = 19 V DC	R _{max} = 270 ³⁾ R _{max} = 180 R _{max} = 90 R _{max} = 45
Weight	CPC-U-54N-02 CPC-U-54N-06 CPC-U-54N-10	0,2 kg 0,25 kg 0,65 kg

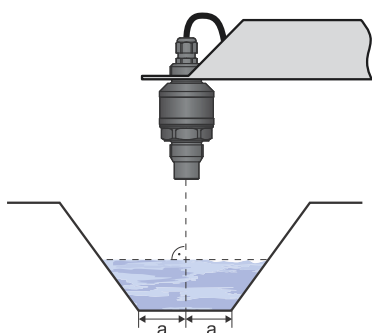
1) In case the level of bulk-solid materials is measured, the measurement range is reduced.

2) Dead zone = Blind zone = Blocking distance

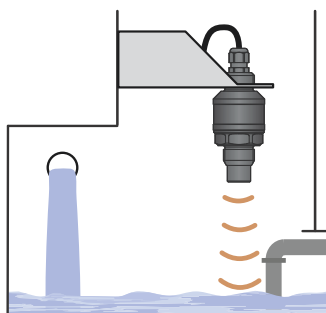
3) Including 250 Ω resistor in case of HART ® connection.



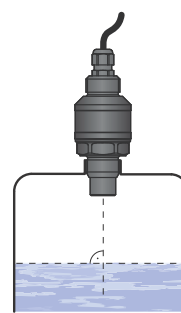
INSTALLATION



Installation in the trough

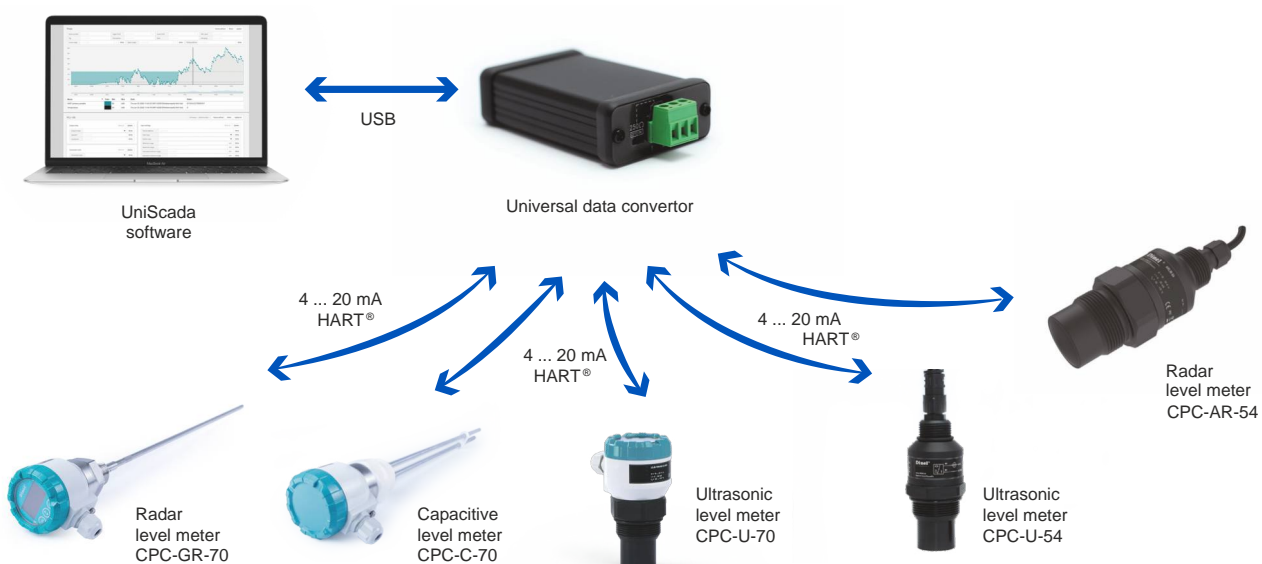
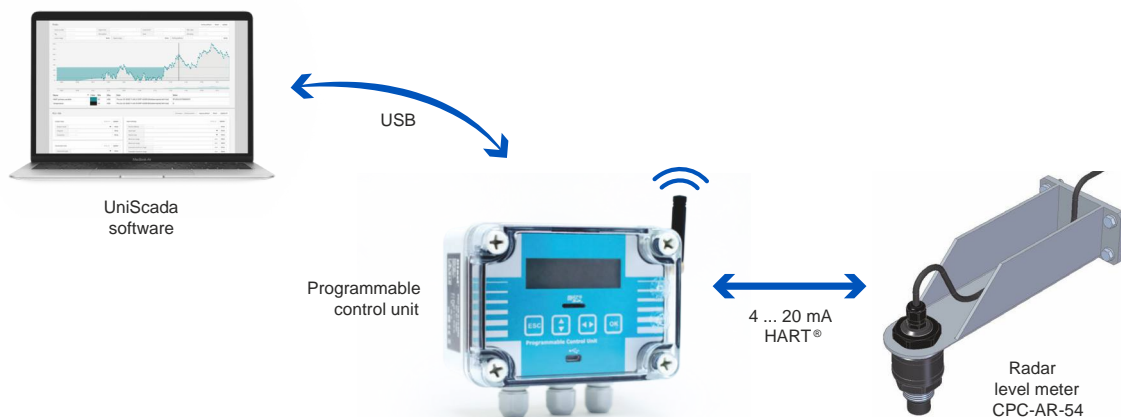


Recommended installation of the CPC-U-54 level meter in the tank via the upper thread

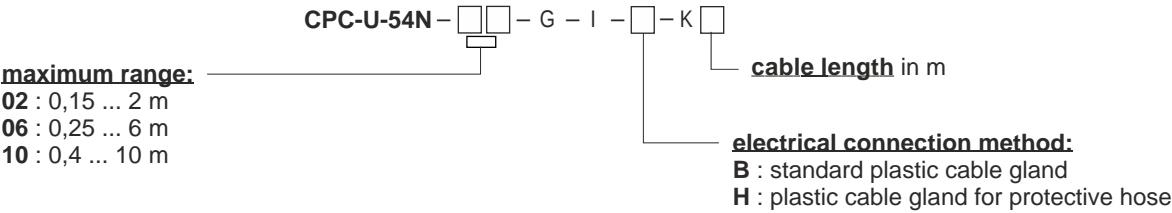


Recommended installation of the CPC-U-54 level meter in the tank using the bottom thread

CONNECTION SYSTEM



ORDER CODE



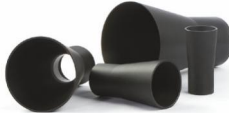





CORRECT SPECIFICATION EXAMPLES

CPC-U-54N-02-G-I-B-K5

(02) maximum range 0,15 ... 2 m; **(G)** process connection pipe thread; **(I)** current output (4 ... 20 mA); **(B)** standard plastic cable gland; **(K5)** cable length 5m

ACCESSORIES

2x seals (o-ring)	included in the price		
Universal USB to HART® converter	at extra cost		
Horn adapter	at extra cost	ST-G 1 ST-G 1½ ST-G 2¼	
Plastic fixing nuts	at extra cost	PUM-G 1 PUM-G 1½ PUM-G 2¼	
Weld flanges stainless steel (NN) or carbon steel (ON)	at extra cost	NN-G1 ON-G1 NN-G1½ ON-G1½	
protecting hose (for H cable gland)	at extra cost		

SAFETY, PROTECTIONSAND COMPATIBILITY

Level meter CPC-U-54 is equipped with protection against electric shock on the electrode, reverse polarity, output current overload, short circuit and against current overload on output.
Protection against dangerous contact is provided by low safety voltage according to 33 2000-4-41.
Electromagnetic compatibility is provided by conformity with standards EN 55011/B, EN 61326-1 and EN 61000-4-2 to 6.

