

CPC-AR-70



- non-contact antenna radar level meter
- display of values on OLED or LCD display
- measuring range up to 8 m or up to 20 m
- 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



HART
COMMUNICATION PROTOCOL

Non-contact radar level meters **CPC-AR-70** with an antenna are suitable for continuous level measurement at medium and longer distances of liquid or pasty substances. 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 **CPC-AR-70** 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 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.



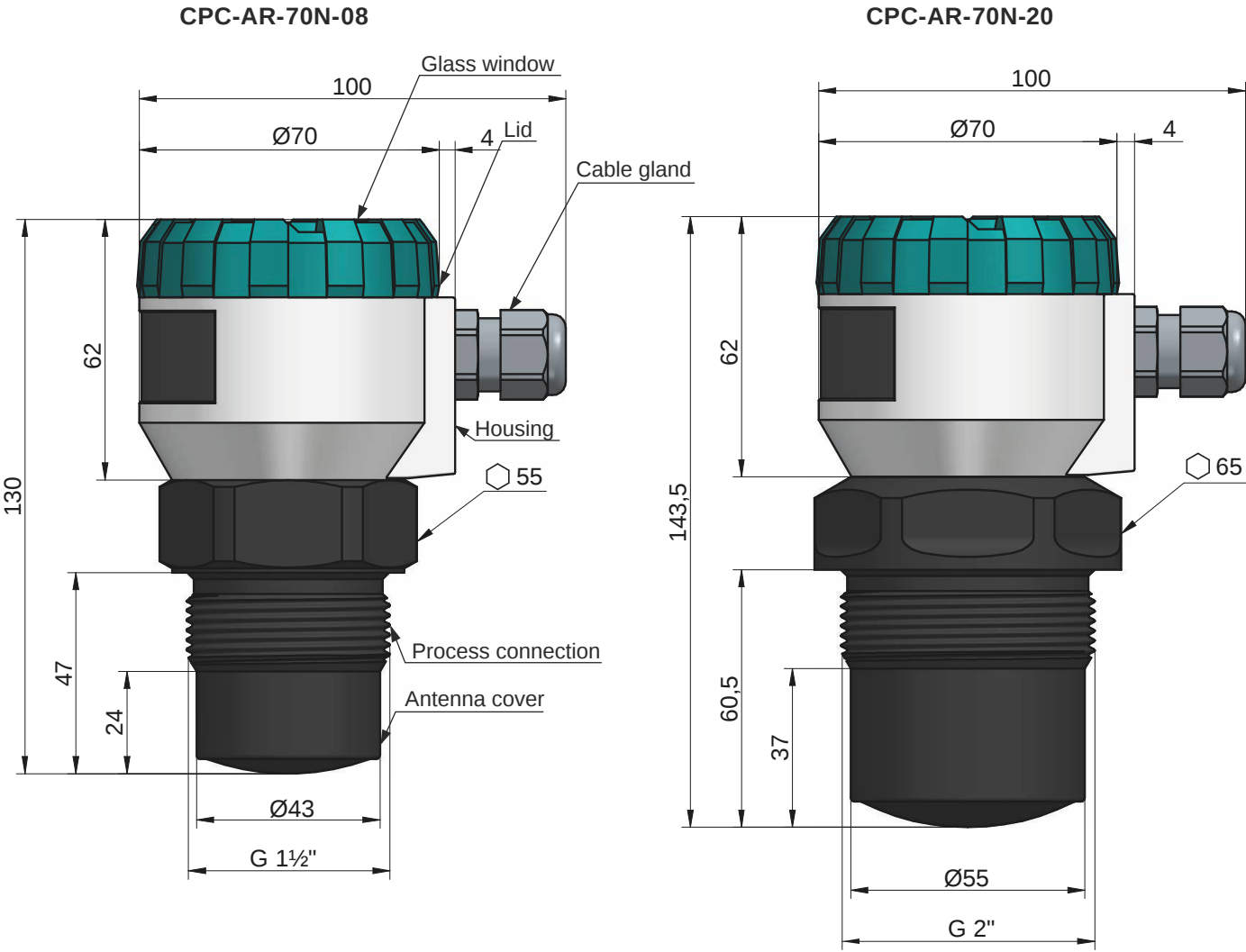
VARIANTS OF LEVEL METERS

CPC-AR-70N-08 Measuring range from 0.3 m do 8 m, process connection via G 1 1/2" pipe thread

CPC-AR-70N-20 Measuring range from 0.3 m do 20 m, process connection via G 2" pipe thread



DIMENSION DRAWINGS



Technical specifications – display module		
Type of display		matrix OLED, LCD
Resolution		128 x 64 pixels
Height of digits / Number of display digits of measured values		9 mm / 5 digits
Colour of display	OLED LCD	yellow black with white background light
Type of buttons		low lift membrane
Ambient temperature range	OLED LCD	-30 ... +70 °C -20 ... +70 °C
Weight		46 g

OLED- suitable for indoor and low-light applications.
LCD – suitable for outdoor applications particularly with direct sunlight.



Technical specifications		
work environment	explosion-free area	
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 m or 1 m ... 20 m)	
current output error	max. 80 µA	
resolution	0,1 mm	
maximum range	8 m or 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)	adjustable 3,75 mA; 4 mA; 20 mA; 22 mA; NO CHANGE	
the time of the first measurement from the start of the power supply	20 sec	
separation capacity „power leads - housing“	2 nF / 500 V AC	
maximum load resistance at	U=24V U=22 V U=20 V	R=270 Ω* R=180 Ω R=90 Ω
protection class	IP 67	
recommended cable	PVC 2x0,75 mm ² with a diameter of 6-8 mm	
tightening torque of the cable gland	3 Nm	
weight	approx. 0,5 kg	

*Including HART[®] 250 Ω resistor

Used materials		
parts of the sensor	variants	standard material
Lid	CPC-AR-70N	aluminium alloy with powder coating
Glass window	all types	polycarbonate
Housing	CPC-AR-70N	aluminium alloy with powder coating
Process connection	all types	plastic PP
Cable gland	CPC-AR-70N	plastic PA (polyamide)



INSTALLATION

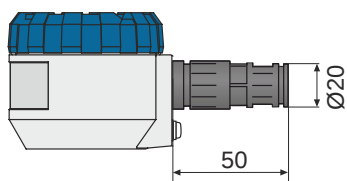
The level meters are mounted in a vertical position in a suitable flange in the upper lid of the tank, or into the hole using the fixing nut. The tightening torque needs to be selected taking into account the gasket used and the working overpressure in the tank.

The place for installation must be chosen so that the electromagnetic wave (transmitted by the level gauge) is not affected by nearby objects (reinforcements, ladders, stirrers, etc.) or by the flow of the liquid being filled. The level gauge can be placed in a pipe extension that has a length smaller than the diameter.

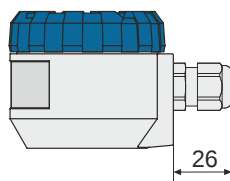
If the level meter has not yet been installed, it must be stored in an intact condition with the cap tightened and the sealing plug in the cable gland.

The level meter does not require any operator to operate. During operation, the operator of the technological unit is informed about the height of the measured substance level using a display module or a follow-up device.

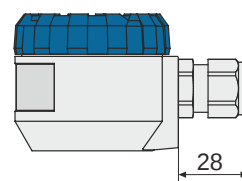
ELECTRICAL CONNECTION



variant "H1"
with protective
conductor

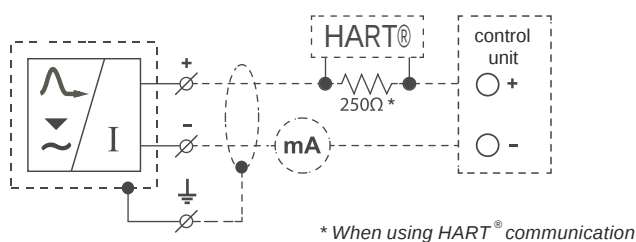


variant "B1"
with cable gland M16

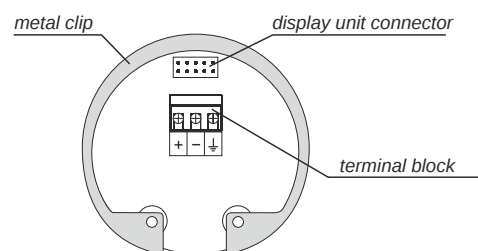


variant "B2"
with cable gland M20

When using the M16 socket, the level meter is connected to the follow-up (evaluation) device with a suitable cable with an external diameter of 6 - 8 mm via screw terminals located under the display module. Recommended core cross-section for the current version is $2 \times 0,5 \dots 0,75 \text{ mm}^2$. The positive pole (+U) is connected to the (+) terminal, the negative pole (0 V) to the (-) terminal and the shield (only for shielded cables) is connected to the ($\perp$).



Wiring diagram of the level meter
with current output CPC-AR-70



Inside view of screw terminals of the level meter
with current output CPC-AR-70

SETTINGS

Set the level meter using 3 buttons placed on the display module. All settings are accessible in the CPC-AR-70 set-up mode access. For detailed information please read at the instructions manual.

Button

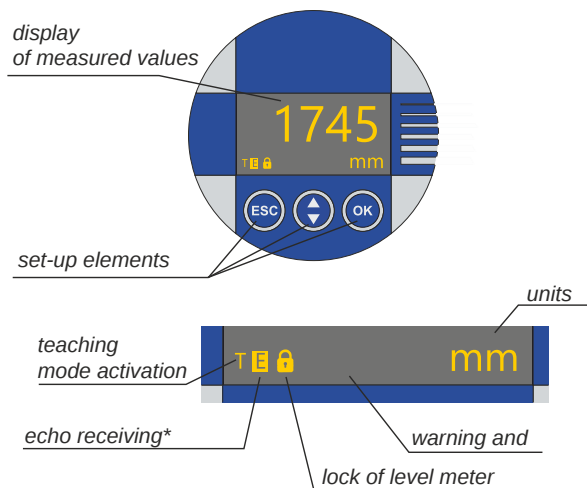
- Set-up mode access
- Confirmation of selected item in the menu
- Move the cursor in the line
- Saving of set-up data

Button

- Move in the menu
- Change of values

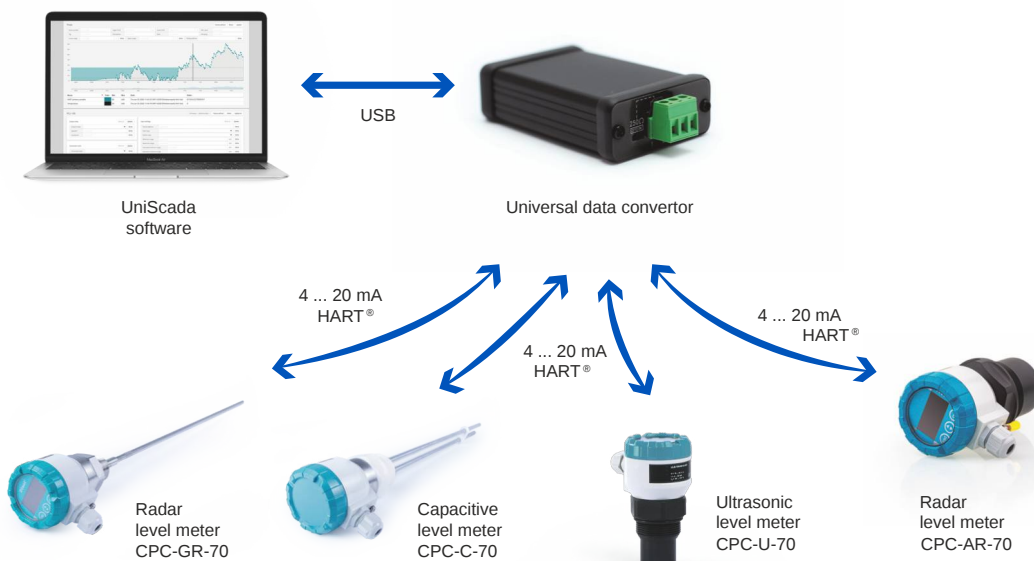
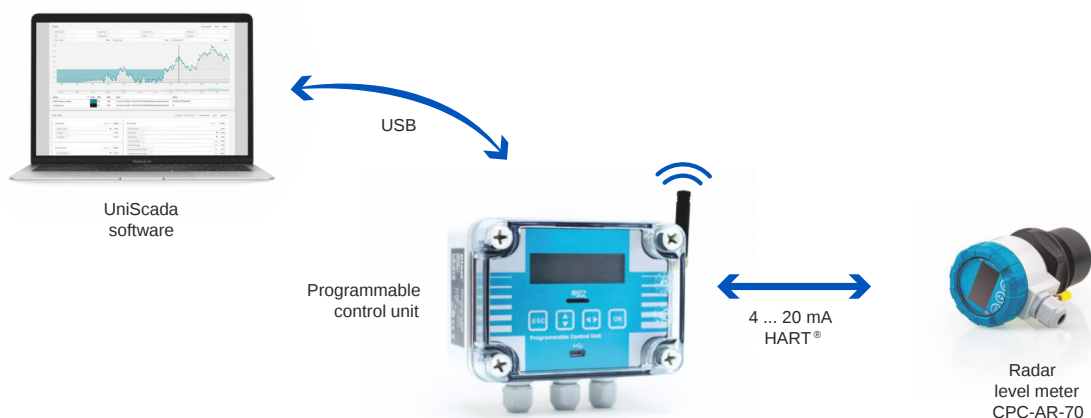
Button

- Cancelling of carried out changes
- Shift one level up

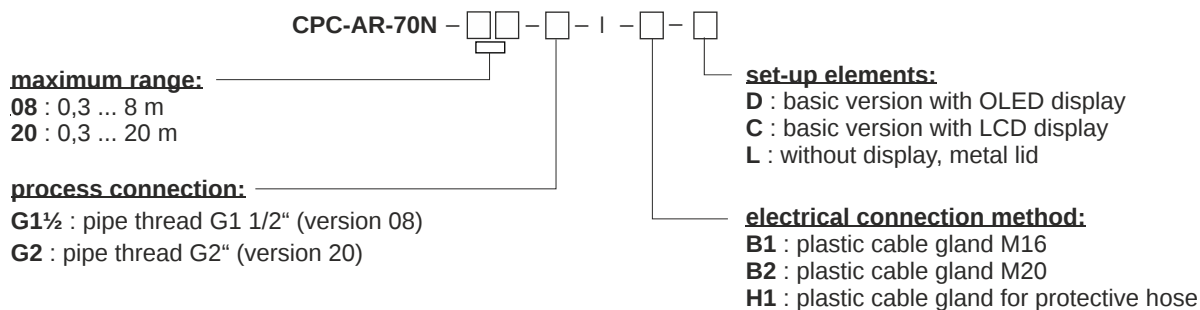


* Slow flashing while the reflected signal (echo) is received from the measured level.

CONNECTION SYSTEM



ORDER CODE



CORRECT SPECIFICATION EXAMPLES

CPC-AR-70N-20-G2-I-B1-D

(20) maximum range 0,3 ... 20 m; (G2) process connection G2" pipe thread; (I) current output (4 ... 20 mA); (B1) standard plastic cable gland M16; (D) basic version with OLED display



ACCESSORIES

1 x o-ring EPDM	included in the price		
Telescopic bracket	at extra cost		
universal convertor from USB to HART®	at extra cost		
display unit	at extra cost		
fixing nut plastic	at extra cost	G1½ G2	
extension cable for display	at extra cost		
stainless steel or steel welding flange	at extra cost	G1½ G2	
protective hose (for type of cable outlet H1)	at extra cost		

