

BM ULTRA COMPACT/REMOTE – UC SERIES

ULTRASONIC LEVEL INSTRUMENTS (Compact/Remote version)

DESCRIPTION

The ultrasonic impulses generated from transducers “antenna system”, which travel at the speed of sound, come reflected by the surface of medium and newly sent back to the transducer.

The period of time that passes between the emission of impulses and the reception of the same ones from the antenna, is proportional to the existing distance between the same antenna and the higher level of the medium to measure, therefore the principle of the ultrasonic measure can be illustrated with the following equation:

$S=CXT/2$, where S: distance, C: velocity of sound, T: time lapse

Because of the wideband impulses, the overlap between the emission and the reception of the same impulses increases in particular zones, extending itself from the transducer to the bottom, causing a wrong measurement of the level. This error zone is defined “blanking zones” and its dimension vary based on the various models of ultrasonic meters that are used.

The use of an advanced microprocessor and the technology “EchoDiscovery”, allows the user of the instrument also in critical zones with heavy jobs. The function “False echo storage” assures the device to identify the correct echo also in presence of false ECHO, supplying correct measures. The integrated temperature sensor puts into effect a temperature compensation in real time.



PRODUCTS OVERVIEW – TECHNICAL DETAILS

UC551



UC552



UC553



NOTE: Pictures are showing Aluminium Housings

DISPLAY

The instruments can be set up in 3 ways:

1. by display
2. by BMware software
3. by HART program



REMOTE UNIT – RU



BM ULTRA COMPACT/REMOTE

TECHNICAL DETAILS

UC551

Application:

Level measurement, suitable for highly corrosive media.

Flow measurement on open channel;

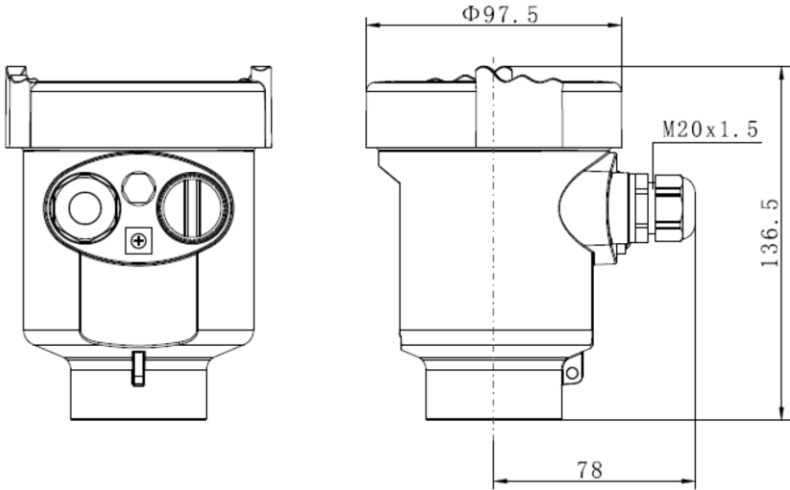
Range:	0.25...5m
Accuracy:	0.2 ... 0.5 % calibrated range
Process connection:	G1½ "A
Ultrasonic transducer:	Compact
Material: sensor:	PBT-GF / PVDF/ PTFE
housing:	plastic PBT-GF / Aluminium
Protection:	IP67
Working temperature:	-40 ÷ 70°C
Storage temperature:	-40 ÷ 80°C
Relative umidity:	Suitable for outdoor application
Pressure of use:	-0.2...1 bar
Resistance to vibrations:	mechanical vibrations 10m/s2, 10÷150Hz
Frequency:	46 KHz
Angle emission lobe:	5.5°
Interval of measure:	~2sec
Interval of updating:	~3sec
Resolution display:	1mm
Supply of 2 wires version:	
- Input voltage:	15÷36Vdc
- Absorption:	max. 22.5mA
- Ripple allowed:	<100Hz, U _{ss} >1V; 100Hz÷100KHz, U _{ss} <10mV
Supply of 4 wires version:	
- Standard input voltage:	24Vdc ±10%;
- Absorption:	max. 4VA, 2.1W
Output signal:	2/4 wires 4-20 mA, HART
Resolution:	1,6µA
Fixed signal for anomaly:	20.5mA; 22mA; 3.8mA
Resistance 2 wires version:	see following diagram
Resistance 4 wires version:	max 500 ohm
Integration time:	-----
Cables entry:	1x PG 13.5
Weight:	~1.8...3 kgs



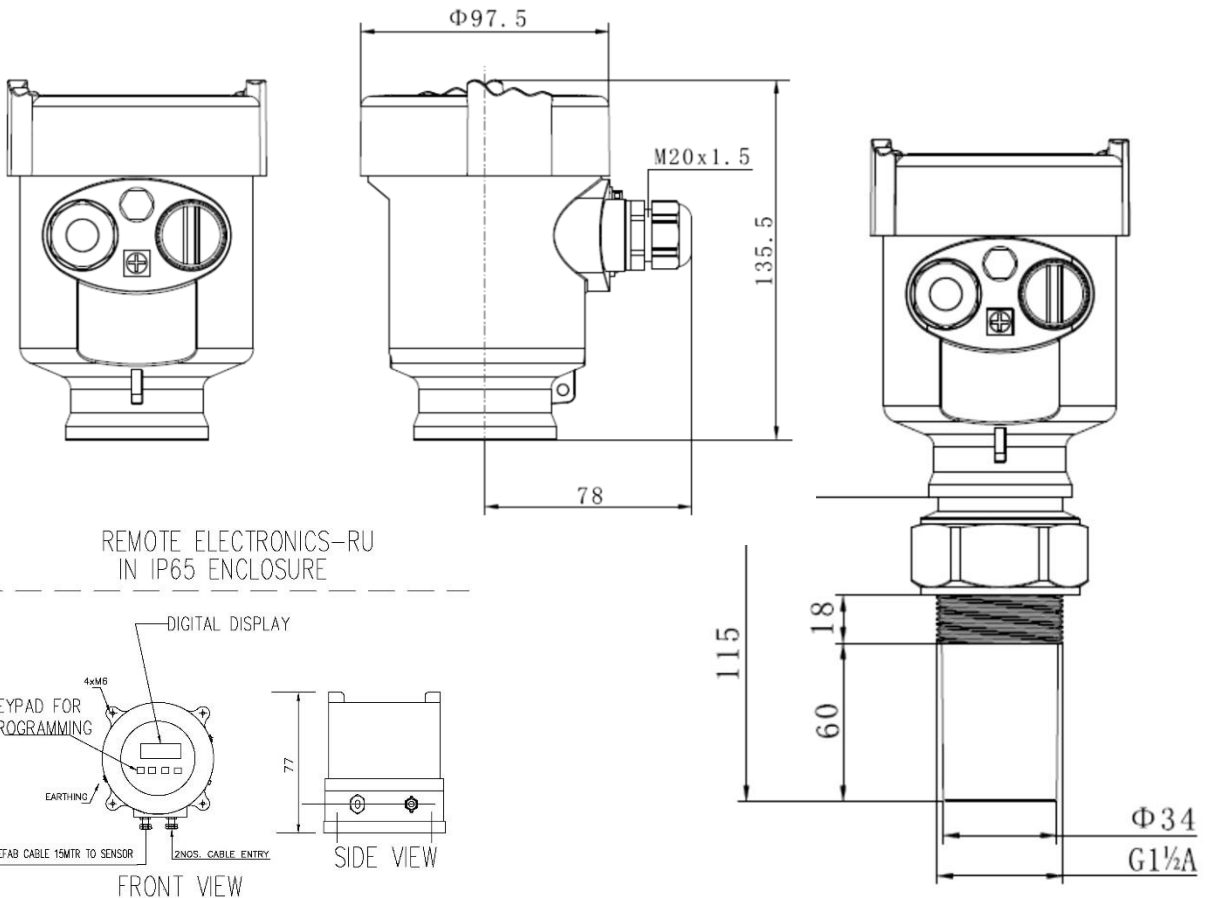
BM ULTRA COMPACT/REMOTE

DIMENSIONS UC551

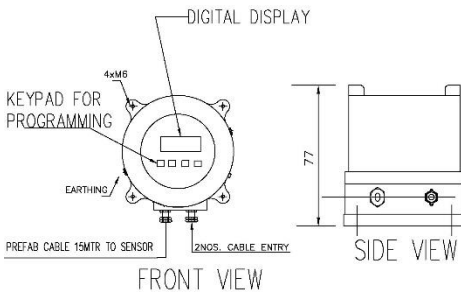
Dimensions with AL frame



Dimensions with PBT-GF frame



REMOTE ELECTRONICS—RU
IN IP65 ENCLOSURE



BM ULTRA COMPACT/REMOTE

ORDERING CODE UC551

P Standard

RU Remote Electronics and Sensor

Material / Working temperature / Protection

- A PBT-GF / -40...70°C / IP66
- B PVDF / -40...70°C / IP67
- C PTFE

Electronic

- A 4...20 mA 2 wires
- B 4...20 mA / HART (2 wires)/Intrinsic Safe 'ia' (OPTIONAL)*
- C 4...20 mA / 22,8...26,4 VDC / HART (2 wires) / HART (4 wires)
- D 4...20 mA / 198...242 VAC / HART (4 wires)**

Material of Housing / Protection

- A Aluminium / IP67
- B Plastic / IP66
- D Aluminium 2 chambers / IP67/Explosion Proof Ex 'd' (OPTIONAL)*
- G Stainless Steel 316L / IP67

Wiring

- M M20x1.5
- N ½ NPT

Display / Programming

- A YES

* To be Specified during ordering



BM ULTRA COMPACT/REMOTE

TECHNICAL DETAILS

UC552

Applications:

Level measurement, suitable for highly corrosive media.

Flow measurement on open channel;

Range: 0.25...10m

Accuracy: 0.2 ... 0.5 % calibrated range

Process connection: G2" A

Ultrasonic transducer: Compact

Materials: sensor: PBT-GF / PVDF/PTFE
housing: plastic PBT-GF / Aluminium

Protection: IP67

Working temperature: -40 ÷ 70°C

Storage temperature: -40 ÷ 80°C

Relative humidity: Suitable for outdoor application

Pressure of use: -0.2...1 bar

Resistance to vibrations: mechanical vibrations 10m/s², 10÷15C

Frequency: 35 KHz

Angle emission lobe: 5.5°

Interval of measure: ~2sec

Interval of updating: ~3sec

Resolution display: 1mm

Supply 2 wires version:

- Input voltage: 15÷36Vdc
- Absorption: max. 22.5mA
- Ripple allowed: <100Hz, U_{ss}>1V; 100Hz÷100KHz, U_s

Supply 4 wires version:

- Standard input voltage: 24Vdc ±10%;
- Absorption: max. 4VA, 2.1W

Output signal: 2/4 wires 4-20 mA, HART

Resolution: 1,6µA

Fixed signal for anomaly: 20.5mA; 22mA; 3.8mA

Resistance 2 wires version: see following diagram

Resistance 4 wires version: max 500 ohm

Integration time: -----

Cables entry: 1x PG 13.5

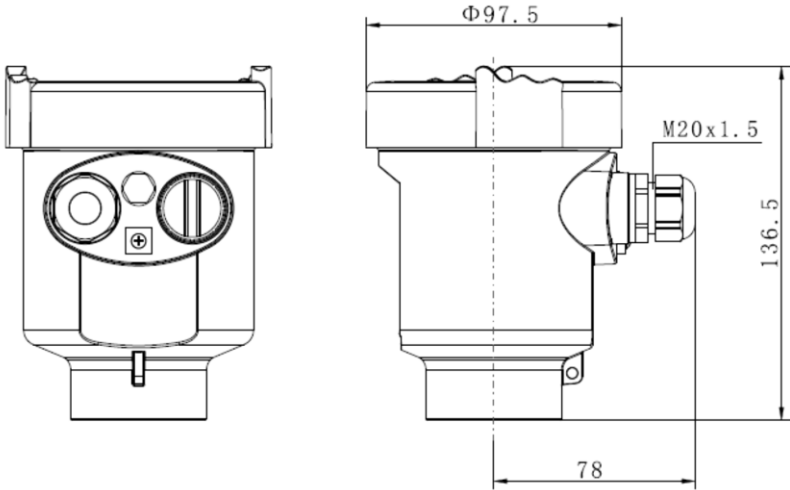
Weight: 1.8...3 kgs



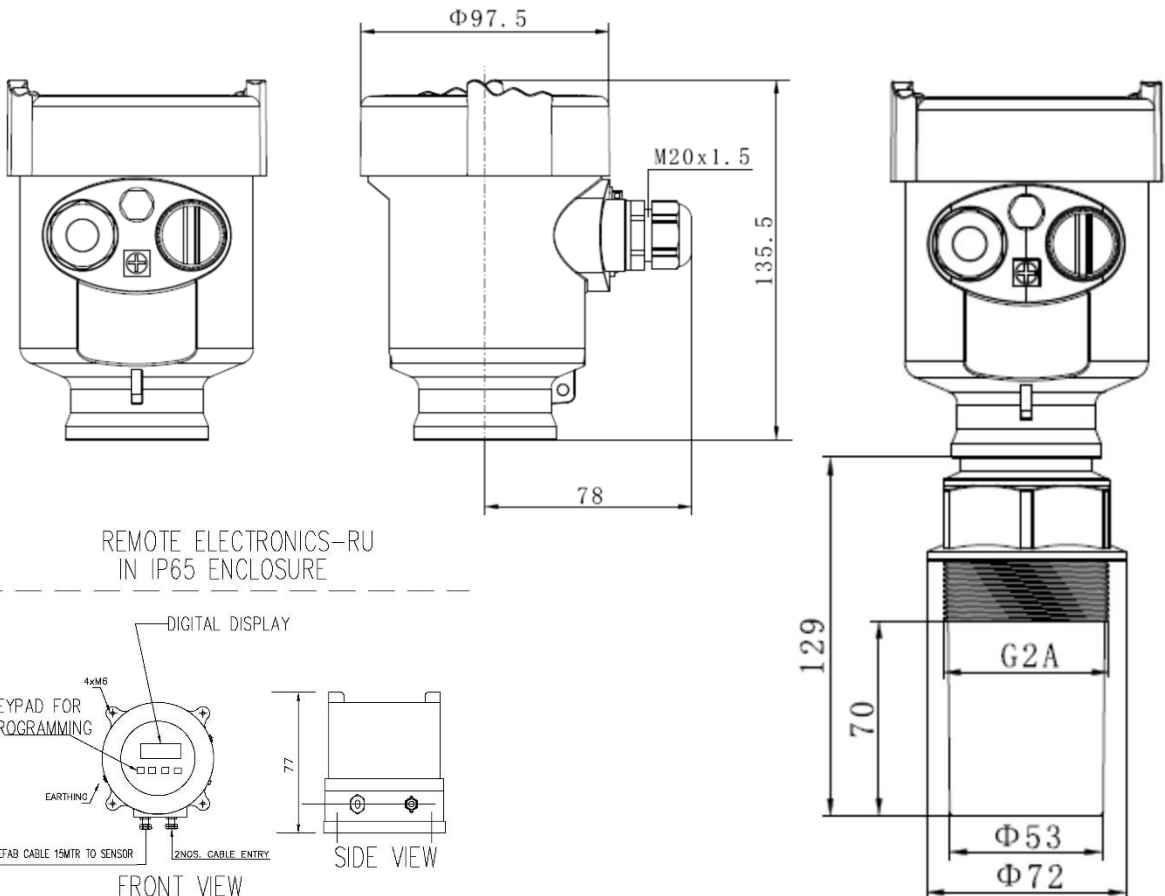
BM ULTRA COMPACT/REMOTE

DIMENSIONS UC552

Dimensions with AL frame



Dimensions with PBT-GF frame



BM ULTRA COMPACT/REMOTE

ORDERING CODE UC552

P Standard

RU Remote Electronics and Sensor

Material / Working temperature / Protection

- A PBT-GF / -40...70°C / IP66
- B PVDF / -40...70°C / IP67
- C PTFE

Electronic

- A 4...20 mA 2 wires
- B 4...20 mA / HART (2 wires)/Intrinsic Safe 'ia' (OPTIONAL)*
- C 4...20 mA / 22,8...26,4 VDC / HART (2 wires) / HART (4 wires)
- D 4...20 mA / 198...242 VAC / HART (4 wires)**

Material of Housing / Protection

- A Aluminium / IP67
- B Plastic / IP66
- D Aluminium 2 chambers / IP67/Explosion Proof Ex 'd' (OPTIONAL)*
- G Stainless Steel 316L / IP67

Wiring

- M M20x1.5
- N ½ NPT

Display / Programming

- A YES

* To be Specified during ordering



BM ULTRA COMPACT/REMOTE

TECHNICAL DETAILS

UC553

Applications:

Level measurement, suitable for highly corrosive media.

Flow measurement on open channel;

Range: 0.4...20m

Accuracy: 0.2 ... 0.5 % calibrated range

Process connection: G1 1/2" A

Ultrasonic transducer: Compact

Materials: sensor: PBT-GF
housing: plastic PBT-GF

Protection: IP67

Working temperature: -40 ÷ 70°C

Storage temperature: -40 ÷ 80°C

Relative umidity: Suitable for outdoor application

Pressure of use: -0.2...1 bar

Resistance to vibrations: mechanical vibrations 10m/s², 10÷150Hz

Frequency: 35 KHz

Angle emission lobe: 3°

Interval of measure: ~2sec

Interval of updating: ~3sec

Resolution display: 1mm

Supply 2 wires version:

- Input voltage: 15÷36Vdc
- Absorption: max. 22.5mA
- Ripple allowed: <100Hz, U_{ss}>1V; 100Hz÷100KHz, U_{ss}<10mV

Supply 4 wires version:

- Standard input voltage: 24Vdc ±10%;
- Absorption: max. 4VA, 2.1W

Output signal: 2/4 wires 4-20 mA, HART

Resolution: 1,6µA

Fixed signal for anomaly: 20.5mA; 22mA; 3.8mA

Resistance 2 wires version: to see following diagram

Resistance 4 wires version: max 500 ohm

Integration time: -----

Cables entry: 1x PG 13.5

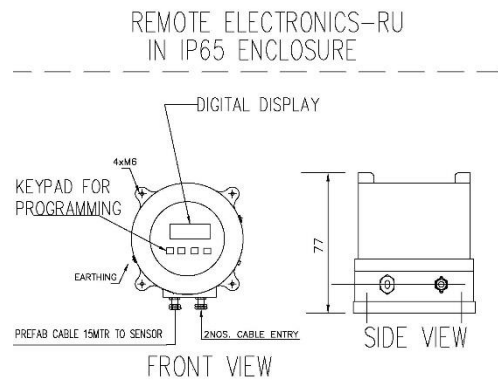
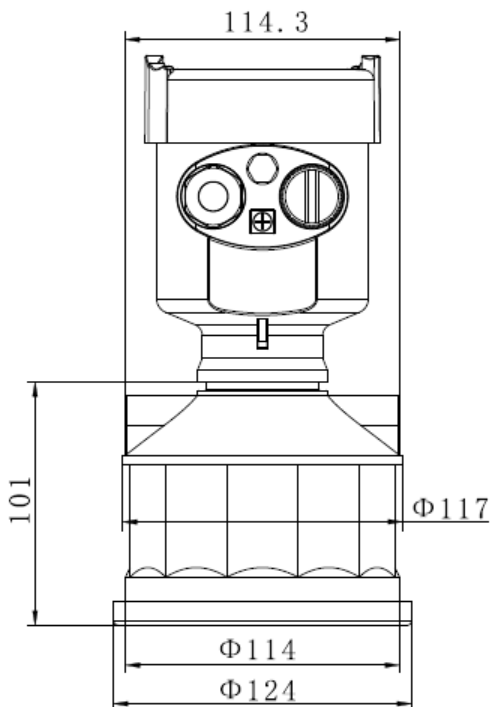
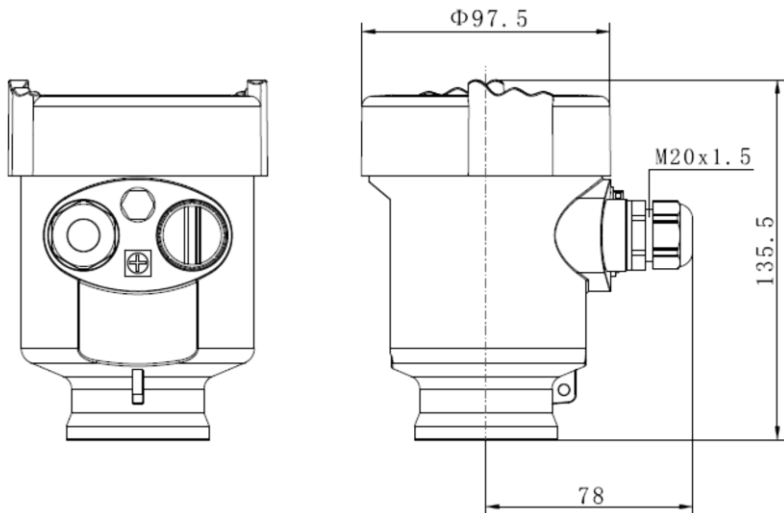
Weight: 2.7...5 kgs



BM ULTRA COMPACT/REMOTE

DIMENSIONS UC553

Dimensions with PBT-GF frame



BM ULTRA COMPACT/REMOTE

ORDERING CODE UC553

P Standard

RU Remote Electronics and Sensor

Material / Working temperature / Protection

A PTB-GF /-40...70°C / IP66

Process Connection

FL Flange

DJ Bracket

Electronic

A 4...20 mA 2 wires

B 4...20 mA / HART (2 wires)/Intrinsic Safe 'ia' (OPTIONAL)*

C 4...20 mA / 22,8...26,4 VDC / HART (2 wires) / HART (4 wires)

D 4...20 mA / 198...242 VAC / HART (4 wires)**

Material of Housing / Protection

A Aluminium / IP67

B Plastic / IP66

D Aluminium 2 chambers / IP67/Explosion Proof Ex 'd' (OPTIONAL)*

G Stainless Steel 316L / IP67

Wiring

M M20x1.5

N ½ NPT

Display / Programming

A YES

* To be Specified during ordering

