EIP

ENVIRO CONTROLS

An ISO 9001:2008 Certified Company

Level Measurement Solutions

for over 3 Decades

EIP SERIES WAVE COMPACT 6.3 GHZ – CW SERIES

PULSE RADAR LEVEL INSTRUMENTS (6.3 GHz)

DESCRIPTION

The Radar Level Meters of **EIP COMPACT WAVE 6.3 GHz** series are excellent devices for no contact level measurement. The microwave impulses, emitted by the radar's antenna, travel at speed of light and a part of their energy, reflected by the surface of the medium to be measured, is received by the same antenna. The period of time (fliying time) between the emission and the arrival of the impulses, is proportional to the existing distance between the antenna and the surface of the medium to be measured.

The electromagnetic wave travels at a very high speed (nanosecond), so it is difficult to identify it: EIP COMPACT WAVE 26 GHz Radar Level Meters, thanks to their integrated management system, use a suitable demodulation technology that allows them to identify the period of time between the emission of the impulses and their corrected reception and, consequently, determine and measure the level.

The Alphanumeric Display allows the user not just to enter the data for the level measurement, but even to display and isolate false echoes .

EIP_WARE is a software for the configuration and calibration of the units with a PC is available too, it has HART communication protocol and it is used with a standard HART MODEM (mandatory).

An advanced microprocessor and the "EchoDiscovery" technology make the device suitable for measurements in critical areas with hard conditions, such as high temperatures and high pressure. The function "False Echo Storage" identifies the correct echo, even if there is a false echo: in this way a correct measurement is gained. An integrated temperature sensor compensates the temperature in real time.
The Radar Level Meters can be installed both in metallic or non metallic tanks; their use is not harmful to humans or envinronment.

PRODUCTS OVERWIEV

COMPACT WAVE CW51

COMPACT WAVE CW52

COMPACT WAVE CW53

EIP SERIES WAVE COMPACT 6.3 GHz

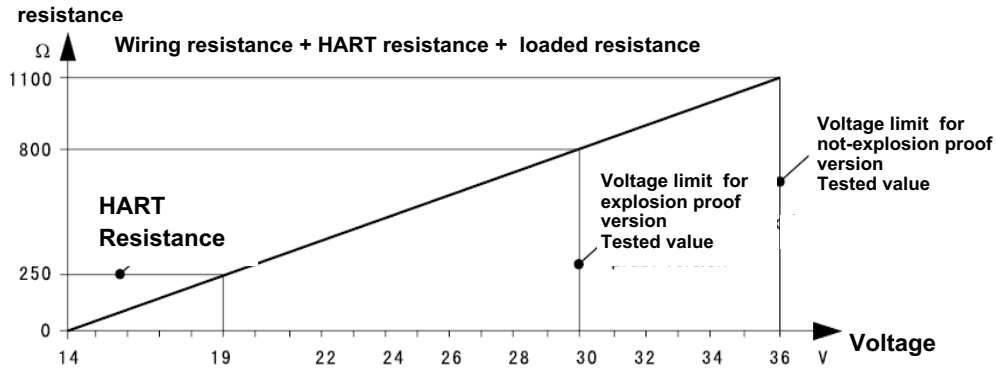
TECHNICAL DETAILS

CW51 for liquids

Applications:
Level measurement insimple working conditions.

Range:	0…10 m
Accuracy:	± 10 mm
Process connection:	G1½ “A - NPT
Antenna:	Rod
Materials: antenna:	PP / PTFE
housing:	plastic PBT-FR / Aluminium / Stainless Steel 316L
Working temperature:	-40 ÷120°C
Storage temperature:	-40 ÷ 80°C
Relative umidity:	<95%
Working Pressure :	-1 ÷ 3 bar
Resistance to vibrations:	mechanical vibrations 10m/s2, 10÷150Hz
Frequency:	6 GHz
Beam Angle:	24°
Interval of measure:	~1sec
Interval of updating:	~1sec
Resolution display:	1mm
Supply 2 wires version:	
- Input voltages:	15÷36Vdc
- Absorption:	max. 22.5mA
- Ripple allowed:	<100Hz, Uss>1V; 100Hz÷100KHz, Uss<10mV
Supply 4 wires version:	
- Standard input voltages:	24Vdc ±10%; 230Vac ±10%
- Absorption:	max. 4VA, 2W
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:	ref. to the following diagram
Resistance 4 wires version	max 500 ohm
Integration time:	0÷99s, programmable
Cables entry:	1x PG 13.5
Weight:	~2 kg

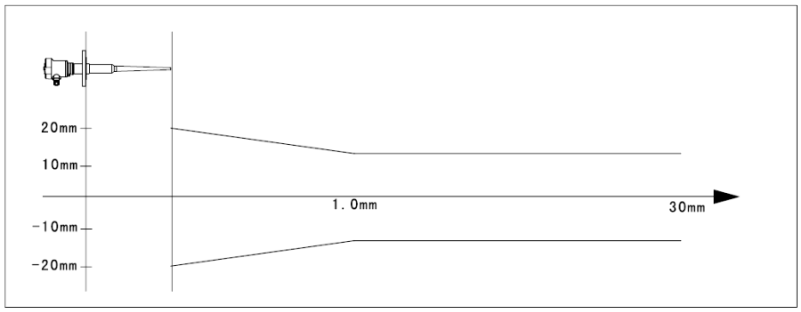
Diagram of loaded resistance, 2 wires version



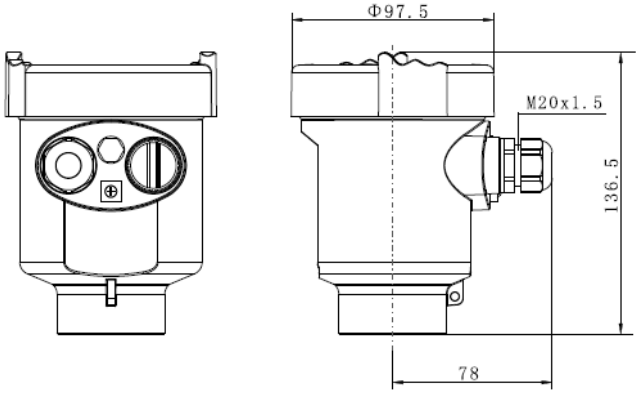
BM SERIES WAVE COMPACT 6.3 GHz

TECHNICAL DETAILS CW51

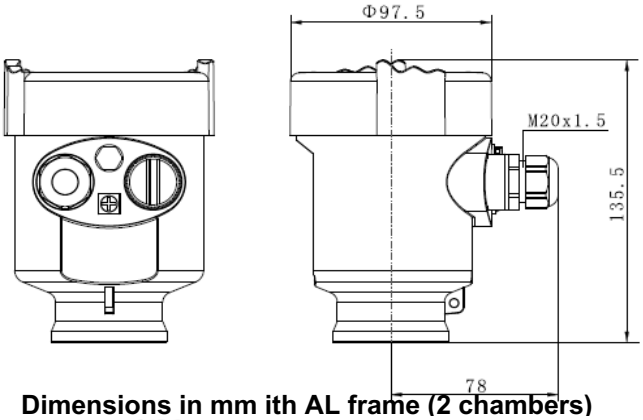
Precision



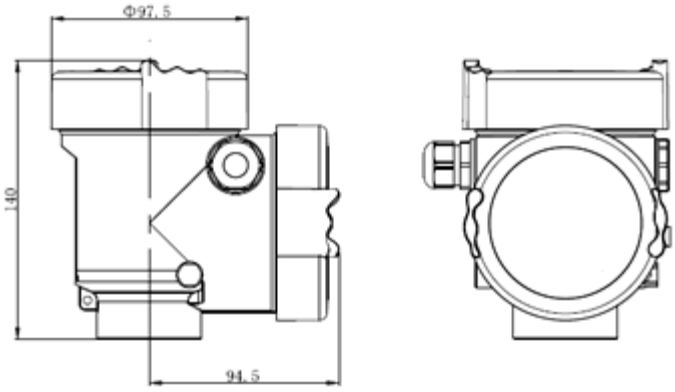
Dimensions in mm with AL/316L frame



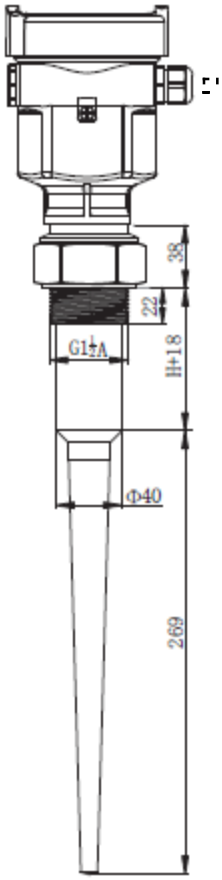
Dimensions in mmwith PBT-FRL frame



Dimensions in mm ith AL frame (2 chambers)



Dimensions in mm



H – Length of Vessel Socket
50
100
150
200
250
300

BM SERIES WAVE COMPACT 6.3 GHz

ORDERING CODE CW51

P Standard

Type of Antenna / Material

A Plastic Rod / PP / -40…120°C

B Plastic Rod / PTFE / -40…120°C

Process Connection Length

A 50mm

B 100mm

C 150mm

D 200mm

E 250mm

F 300mm

X Special type (on request)*

Process Connections / Material

GP Thread G 1½ A / PVDF

NP Thread G 1½ NPT / PVDF

FX Special type (on request)*

Electronic

B 4…20 mA HART 2 wires

C 4…20 mA / 22,8…26,4 VDC / 4 wires**

D 4…20 mA / 198…242 VAC / HART 4 wires**

Housing Material / **Protection**

B Plastic / IP67

A Aluminium / IP67

D Aluminium (2 chambers) / IP67**

G Stainless Steel / IP67

Wiring

M M20x1.5

N ½ NPT

Display / Programming

A YES

** ON REQUEST FOR QUANTITIES > 10 PCS ONLY.*

***With Electronic code "C" or "D" (4 wires versions), Housing code "D" (Aluminium - 2 chambers) is mandatory*

BM SERIES WAVE COMPACT 6.3 GHz

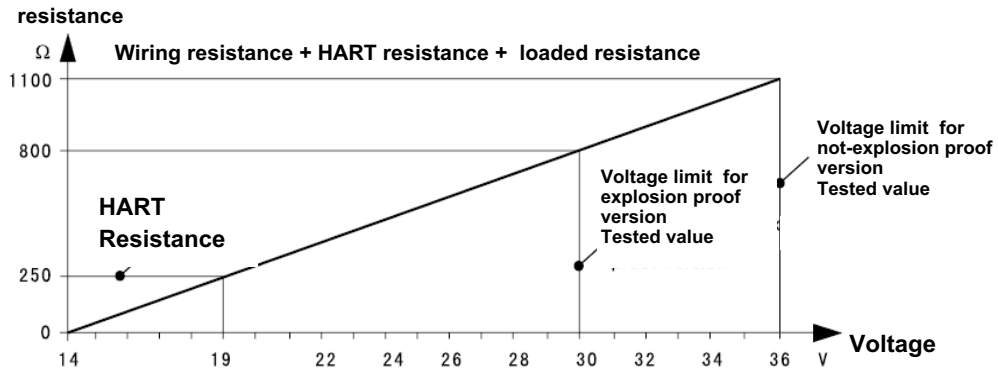
TECHNICAL DETAILS

CW52 for liquids

Applications: Level measurement in liquids. Suitable for highly erosive environments.

Range:		0…30 m
Accuracy:		±10 mm
Process connection:		PTFE Protected Flanges SS 316L PN16 DN 50, 100, 150, 200, 250, 300
Antenna:		Rod
Materials:	antenna:	PTFE
	housing:	plastic PBT-FR / Aluminium / AISI
	flanges:	SS 316L
Working temperature:		-40 ÷150°C
Storage temperature:		-40 ÷ 80°C
Relative umidity:		<95%
Working Pressure :		-1 ÷ 16 bar
Resistance to vibrations:		mechanical vibrations10m/s2, 10÷150Hz
Frequency:		6 GHz
Beam Angle:		24°
Interval of measure:		~1sec
Interval of updating:		~1sec
Resolution display:		1mm
Supply 2 wires version:		
- Input voltages:		15÷36Vdc
- Absorption:		22.5mA
- Ripple allowed:		<100Hz, Uss>1V; 100Hz÷100KHz, Uss<10mV
Supply 4 wires version:		
- Standard input voltages:		24Vdc ±10%; 230Vac ±10%
- Absorption:		max. 4VA, 2W
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:		ref. to the following diagram
Resistance 4 wires version		max 500 ohm
Integration time:		0÷99s, programmable
Cables entry:		1x PG 13.5
Weight:		up to ~5 kg (depending on the Flange Ø)

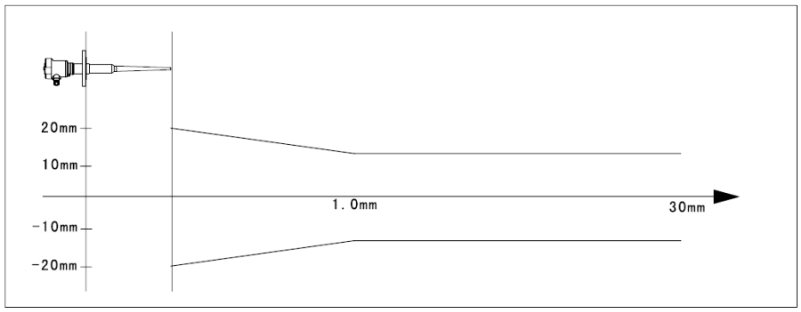
Diagram of loaded resistance, 2 wires version



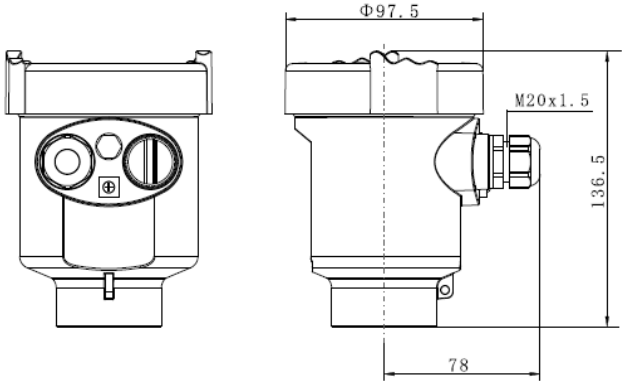
BM SERIES WAVE COMPACT 6.3 GHz

TECHNICAL DETAILS CW52

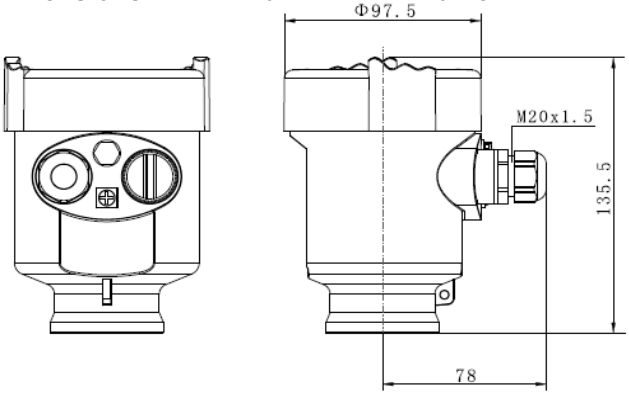
Precision



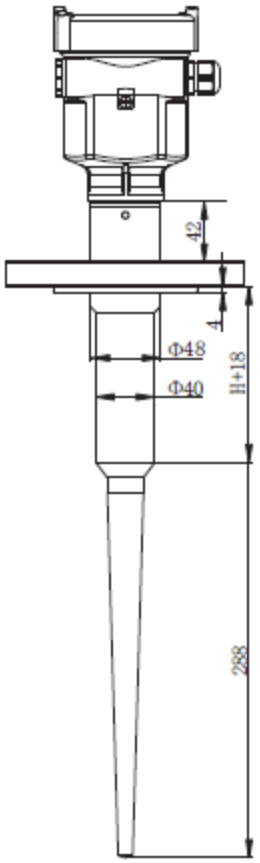
Dimensions in mm with AL/316L frame



Dimensions in mm with PBT-FRL frame

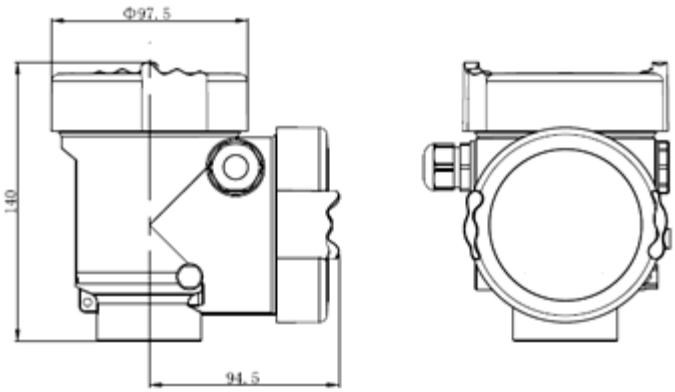


Dimensions in mm



H – Length of Vessel Socket
50
100
150
200
250
300

Dimensions in mm with AL frame (2 chambers) frame



BM SERIES WAVE COMPACT 6.3 GHZ

ORDERING CODE CW52

P Standard

Type of Antenna / Material / Working temperature

B Plastic Rod / PTFE / -40…150°C

Process Connection Length

A 50mm
B 100mm
C 150mm
D 200mm
E 250mm
F 300mm
X Special type (on request)*

Process Connection / Material

FC PTFE Protected Flange DN50 PN16 SS 316L
FD PTFE Protected Flange DN80 PN16 SS 316L
FE PTFE Protected Flange DN100 PN16 SS 316L
FK PTFE Protected Flange DN150 PN16 SS 316L
YP Special connection (on request)*

Electronic

B 4…20 mA HART 2 wires
C 4…20 mA / 22,8…26,4 VDC / HART 4 wires**
D 4…20 mA / 198…242 VAC / HART 4 wires**

Housing Material / Protection

B Plastic / IP66
A Aluminium / IP67
D Aluminium (2 chambers) / IP67
G Stainless Steel 316L / IP67

Wiring

M M20x1.5
N ½ NPT

Display / Programming

A YES

** ON REQUEST FOR QUANTITIES > 10 PCS ONLY.*

***With Electronic code "C" or "D" (4 wires versions), Housing code "D" (Aluminium - 2 chambers) is mandatory*

NOTE:
• The size of the flange refers to GB/T9119-2000 PN16. the thickness of the flange is 15mm.

BM SERIES WAVE COMPACT 6.3 GHz

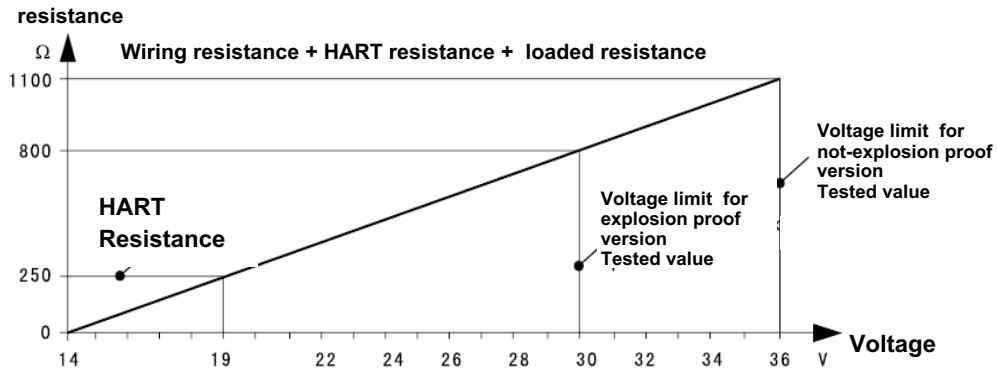
TECHNICAL DETAILS

CW53 for liquids and solids

Applications: Level measurement in liquids and solids (short-range). Suitable for hard working conditions.

Range:	0…35 m
Accuracy:	±10 mm
Process connection:	Flanges AISI 316L SS PN16 DN50,80,100,150,200
Antenna:	Horn Ø 50, 80, 100, 150, 200
Materials: antenna:	SS 316L
housing:	plastic PBT-FR / Aluminium / AISI
flanges:	SS 316L
Working temperature:	-40…200°C
Storage temperature:	-40 ÷ 80°C
Relative umidity:	<95%
Working pressure:	-1 ÷ 40 bar
Resistance to vibrations:	mechanical vibrations 10m/s2, 10÷150Hz
Frequency:	6 GHz
Beam Angle:	29°; 26°; 24°; 20° (depending on horn Ø)
Interval of measure:	~1sec
Interval of updating:	~1sec
Resolution display:	1mm
Supply 2 wires version:	
- Input voltage:	15÷36Vdc
- Absorption:	max. 22.5mA
- Ripple allowed:	<100Hz, Uss>1V; 100Hz÷100KHz, Uss<10mV
Supply 4 wires version:	
- Standard input version voltage:	24Vdc ±10%; 230Vac ±10%
- Absorption:	max. 4VA, 2W
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:	ref. to the ollowing diagram
Resistance 4 wires version:	max 500 ohm
Time of integration:	0÷99s, programmable
Cables entry:	1x PG 13.5
Weight	up to ~6 kg (depending on the Flange Ø)

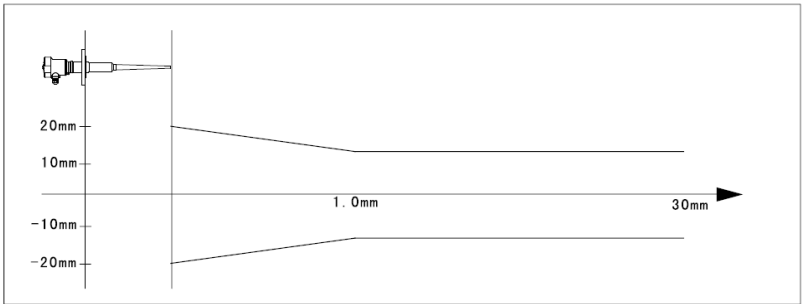
Diagram of loaded resistance, 2 wires version



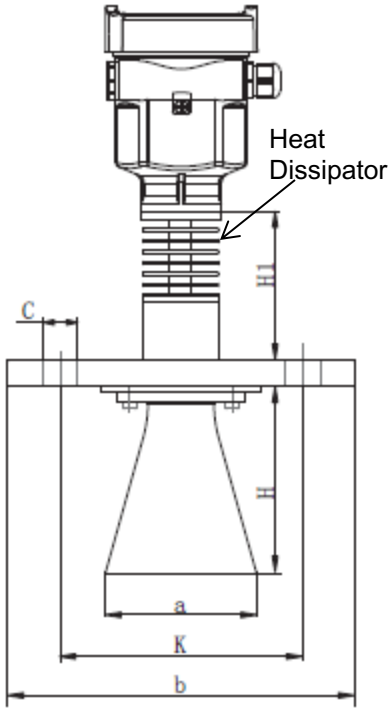
EIP SERIES WAVE COMPACT 6.3 GHz

TECHNICAL DETAILS CW53

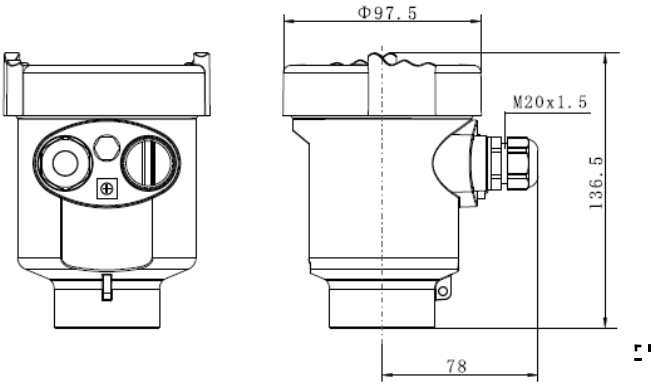
Precision



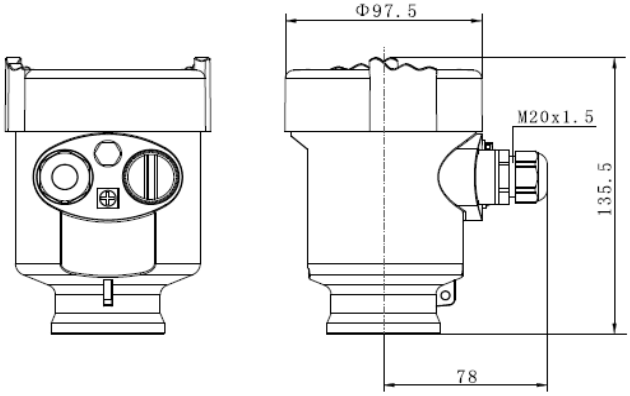
Dimensions in mm



Dimensions in mm with AL/316L frame

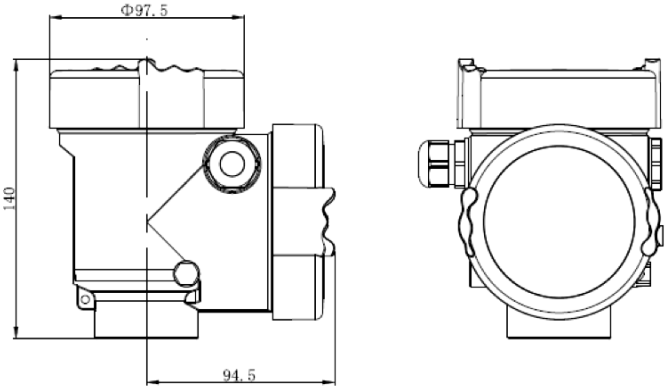


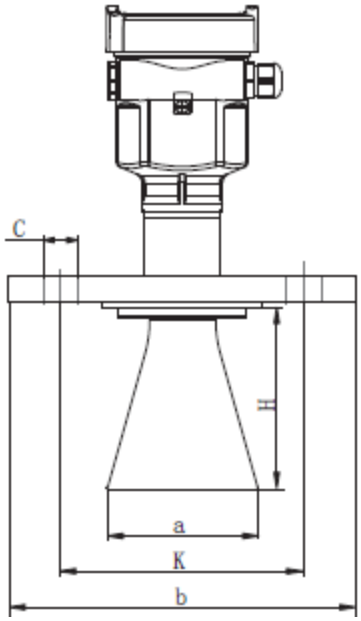
Dimensions in mm with PBT-FRL frame



	a	K	b	C	H	H1
DN50	-	Ø125	Ø165	Ø16 X4	-	123
DN80	Ø75	Ø160	Ø200	Ø16X8	60	123
DN100	Ø96	Ø180	Ø220	Ø16X8	120	123
DN150	Ø146	Ø240	Ø285	Ø20X8	205	123

Dimensions in mm with AL frame (2 chambers)





EIP SERIES WAVE COMPACT 6.3 GHz

ORDERING CODE CW53

P Standard

Types of Antenna / Material

C Horn Antenna Ø 50mm / AISI 316L
D Horn Antenna Ø 80mm / AISI 316L
E Horn Antenna Ø 100mm / AISI 316L
F Horn Antenna Ø 150mm / AISI 316L
G Horn Antenna Ø 200mm / AISI 316L

Antenna Extensions

A ------
B 200mm
C 500mm
D 1000mm
E 2000mm
X Special type (On request)

Connections / Material

FA Flange DN50 PN16 AISI 316L
FB Flange DN80 PN16 AISI 316L
FC Flange DN100 PN16 AISI 316L
FD Flange DN150 PN16 AISI 316L
FE Flange DN200 PN16 AISI 316L
YP Special type (On request)

Retained seal / Working Temperature

2 Viton / -40…130°C
3 Kalrez / -20…130°C
4 Viton / -40…200°C with heat dissipator
5 Kalrez / -20…200°C with heat dissipator

Electronic

B 4…20 mA 2 wires
C 4…20 mA / 22,8…26,4 VDC / HART 4 wires
D 4…20 mA / 198…242 VAC /HART 4 wires

Housing Material / Protection

B Plastic / IP67
A Aluminium / IP67
D Aluminium (2 chambers) / IP67
G AISI 316L / IP66 / IP67

Wiring

M M20x1.5
N ½ NPT

Display / Programming

A Yes

Sweeping System

A Yes

** ON REQUEST FOR QUANTITIES > 10 PCS ONLY.*

***With Electronic code "C" or "D" (4 wires versions), Housing code "D" (Aluminium - 2 chambers) is mandatory*

EIP SERIES WAVE COMPACT 6.3 GHz

Important Notices for CW53

- The size of the antenna CANNOT be smaller than the size of the flange or viceversa.

  If the antenna is bigger than the flange (nozzle) hole, the antenna cannot fit in.

  Example: Horn Antenna Ø 150mm code "F" CANNOT be matched with Flange DN100 PN16 code "FC"

- The size of the flange refers to GB/T9119-2000 PN16. the thickness of the flange is 15mm.
- DN100 flange is suggested when Parabolic Antenna is chosen
- The user has to build the flange with the same size of the Parabolic Antenna
- With sprayed PTFE Antenna, please use a sprayed PTFE flange with larger size

EIP
ENVIRO CONTROLS
An ISO 9001:2008 Certified Company

About EIP

EIP was established about three decades ago, since then the company has been able to build its reputation in the field of Design / Manufacture Supply of accurate reliable POINT LEVEL AND INVENTORY CONTROL SYSTEMS which have proven to be in satisfactory operation under harsh environmental conditions. Apart from India EIP products have also been proven in other countries.

EIP aims to provide not only stable operating system but also to re-engineer equipments and systems as per the needs of the customers. This has been possible due to our wide experience in this field backed by constant technological development and absorption of new technologies developed world-wide.

EIP's strong endeavor to provide the best solution to its customers has gone a long way in introducing the most advanced level measurement technology from time to time.

Recent value addition to the Solutions provided by EIP is the Non Contact Ultrasonic Flow Meter which solves the problem of accurate flow measurement without any invasion into the pipeline, and the Solid Flow Detector which determines any choking or jamming of the pipelines in which ash or any other Solid material is flowing.

EIP has also diversified its portfolio to provide Zero leakage Non Corrosive Heavy Duty Knife Gate Valves, Butterfly Valves and Water Control Gate.

EIP ENVIRO LEVEL CONTROLS PVT. LTD.
B-45, SECTOR-8, NOIDA-201301, (INDIA)
Tel. No. : 91-120-2421831,2421832 & 4243333
Fax No.: 91-120-2421833
Email: rgoyal@eipenviroindia.com, rajat@eipenviroindia.com
Website : www.eipenviroindia.com

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