

ANL-9080N30 regular version

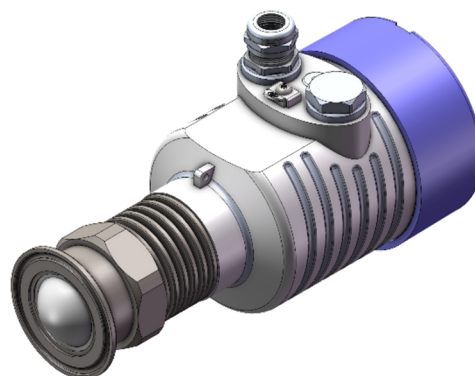
Non-contact Radar Level Transmitter Datasheets

Version V.2024

Characteristics

- 80GHz Frequency FMCW radar system.
- Measurement application of the Small tanks in liquids, solids.
- Chemical industry reaction tanks, reactors. Stirring and corrosive environment applications.

Specifications



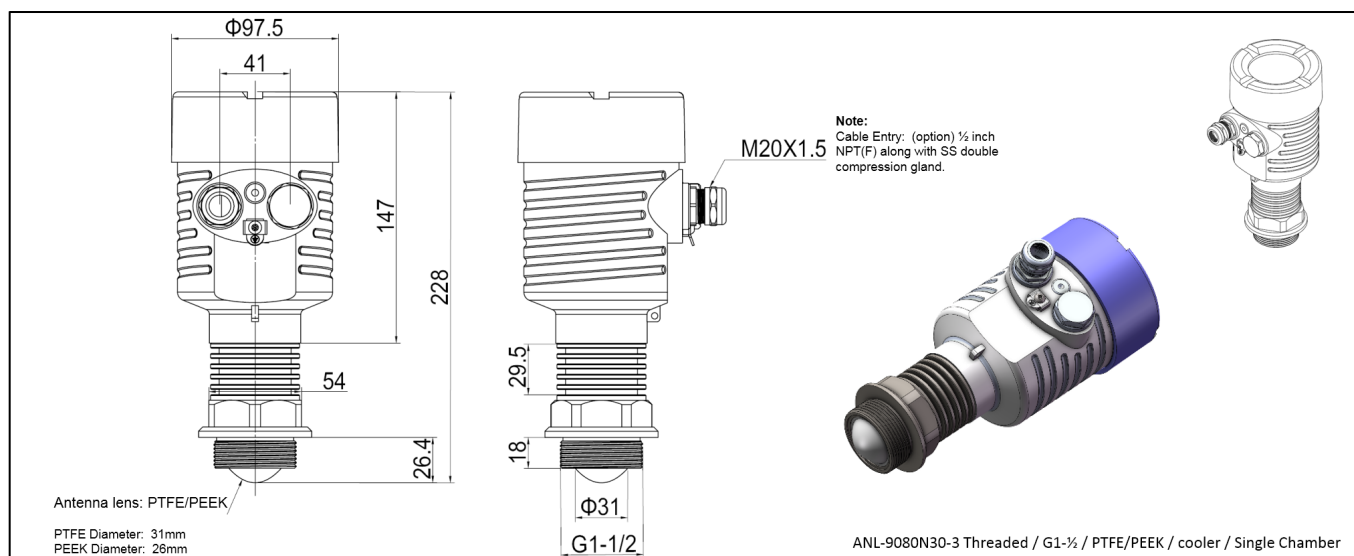
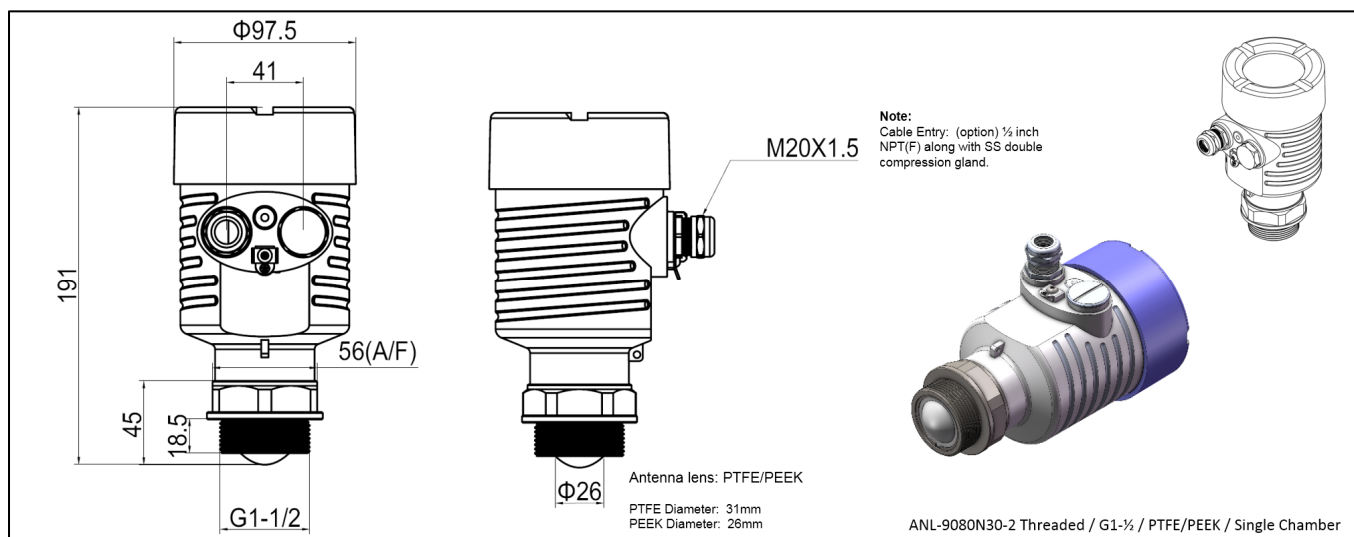
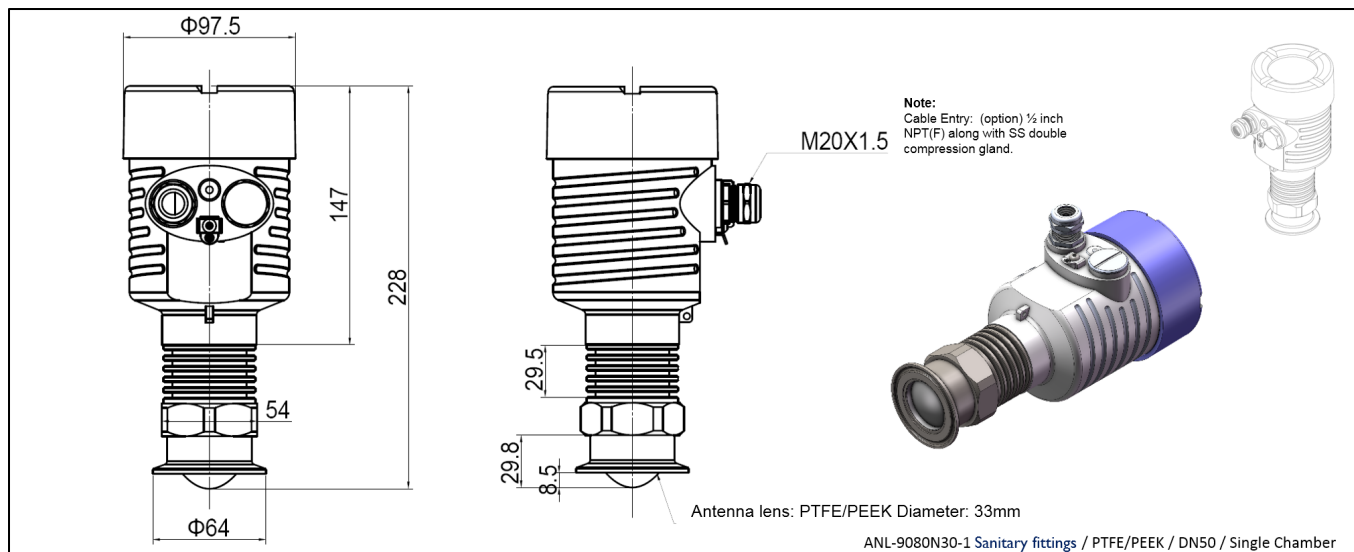
ANL-9080N30	Lens material PTFE		Lens material PEEK	N60 (cool version)
Max. measuring range	20M for liquid, 10M for solids/powder		20M for liquid, 10M for solids/powder	20M for liquid, 10M for solids/powder
Tx/Rx frequency	Tx/Rx frequency 76.2 to 80.2GHz Dynamic FM Sweep Bandwidth 1~4GHz (The adjustment FM range can be customized according to the ISM requirements of the customer's region)			
Near blind spot	< 100mm from the flange down surface			
Meas. Principle	FMCW Radar System			
Lens Antenna Medium	PTFE Φ30mm		PEEK Φ30mm	PEEK Φ30mm
Antenna beam / Gain	Beam angle 7~8°/ Gain 26~27dB *		Beam angle 7~8°/ Gain 25~26dB *	(*) Note that the detailed data is described in the specific antenna type.
Meas. Resolution	0.1mm (<10m range)			
Meas. Accuracy	±1 mm			
Ambient temperature	-40 ... +85 °C		-60 ... +105 °C	
Process temperature	-40°C ... +150°C/250°C *		-60°C ... +150°C/250°C *	
Process pressure	-0.5 ~ +0.8MPa *		-1.0 ~ +5.0MPa *	(*) Note that the detailed pressure range is described in the specific antenna type.
Process connection	Flanges >= DN30 or Thread G1-½ or NPT			
Signal output	4-20 mA/HART7 2-wire, 4-20 mA/HART7 4-wire, Profibus PA / DP, Ethernet-APL, Modbus protocol 4-wire			
Variables influencing meas. accuracy	Specifications for the digital measured value Temperature drift - Digital output: ±1mm/10K relating to the max. measuring range or max. 15 mm Additional deviation through electromagnetic interference acc. to EN-61326: < ±10 mm Specifications apply also to the current output Temperature drift - Current output: ±0.02%/10K relating to the 16.7 mA span or max. ±0.2% Deviation in the current output due to digital/analogue conversion Non-Ex and Ex-ia version: < ±1μA; Ex-d-ia version: < ±1μA Additional deviation through electromagnetic interference acc. to EN-61326: < ±150μA			
Indication/Adjustment (LOI)	1. 160x80 LCD FSTN RGB backlight monitor adapter with keyboard module, operation Temp. -20°C ... 70°C. or 128x64 OLED monitor adapter with keyboard module, operation Temp. -55°C ... 80°C. (option) or 230x240 LCD TFT colors monitor adapter with keyboard module, operation Temp. -20°C ... 70°C. (option only for 4-wire system) 2. (APP) Radar MobileManager via BT wireless connection 3. (PC software) Radar PCManager /or Via a PC with PACTware/DTM (an interface converter AiW-305 USB CONNECT is required)			
Power supply	16V ~ 40 VDC / Load resistor ≈ 600Ω			
Wireless communication	Bluetooth 5.0 (Bluetooth 4.0 LE compatible), communication range 40m, in rainy day 20m			
Approvals	CEx/CNEx: Ex ia IIC T6 Ga IP67; Ex d IIC T6 Gb IP67 // SIL2 (No. 66230714.CSETW60)			
Housing	Single chamber / Double chamber, Aluminum / Stainless steel / Plastic PBT, IP66 / IP67 / IP68			
Applications	Liquids, solids, and stirring and corrosive environment applications			

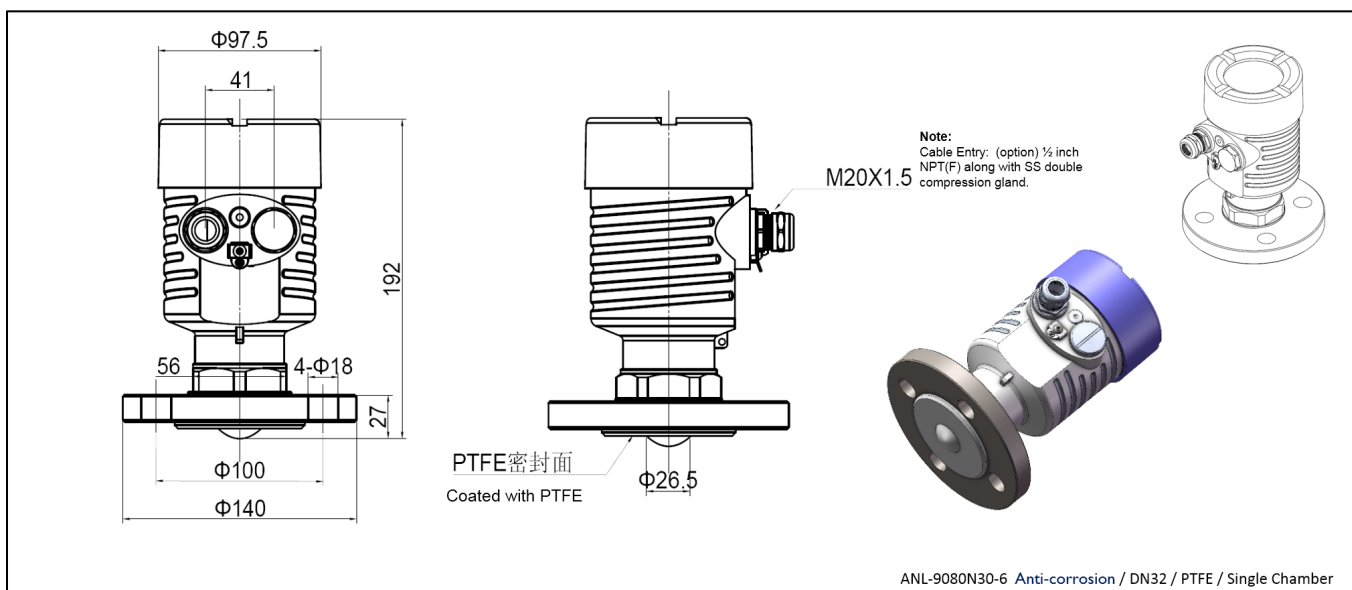
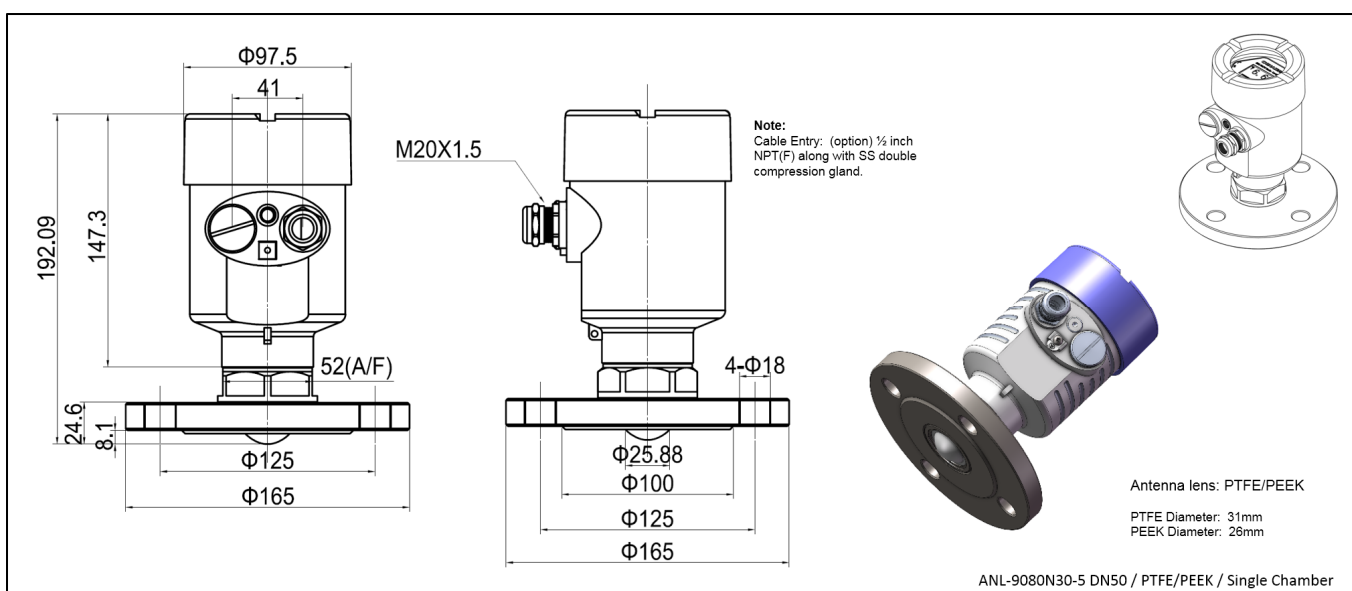
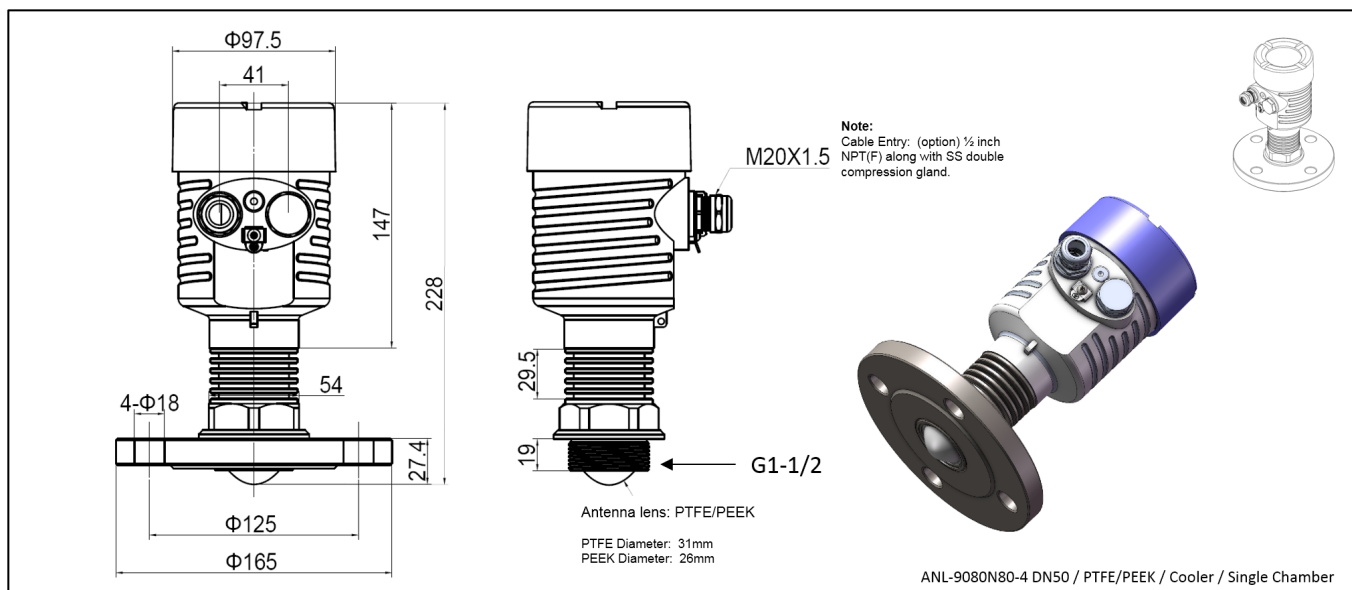
SERVICE CONTACT: 86-13799977915, 86-18965063391 (TECHNICAL SUPPORT), 86-18106067295 (AFTER SALE SERVICE)

ALTHOUGH WE HAVE RECONCILED THE CONTENTS OF THE MANUAL WITH DESCRIPTION OF INSTRUMENT, THERE MAY STILL BE CHANGES WE CANNOT ENSURE THAT IT IS FULLY CONSISTENT. THE CONTENT WILL BE CHECKED AND CORRECTED IN AN ORDERLY, AND THE ERRATA WILL BE IN SUBSEQUENT RELEASES. WE WELCOME USERS TO MAKE VARIOUS SUGGESTIONS FOR IMPROVEMENT. [TECHNICAL DATA SUBJECT TO CHANGE]

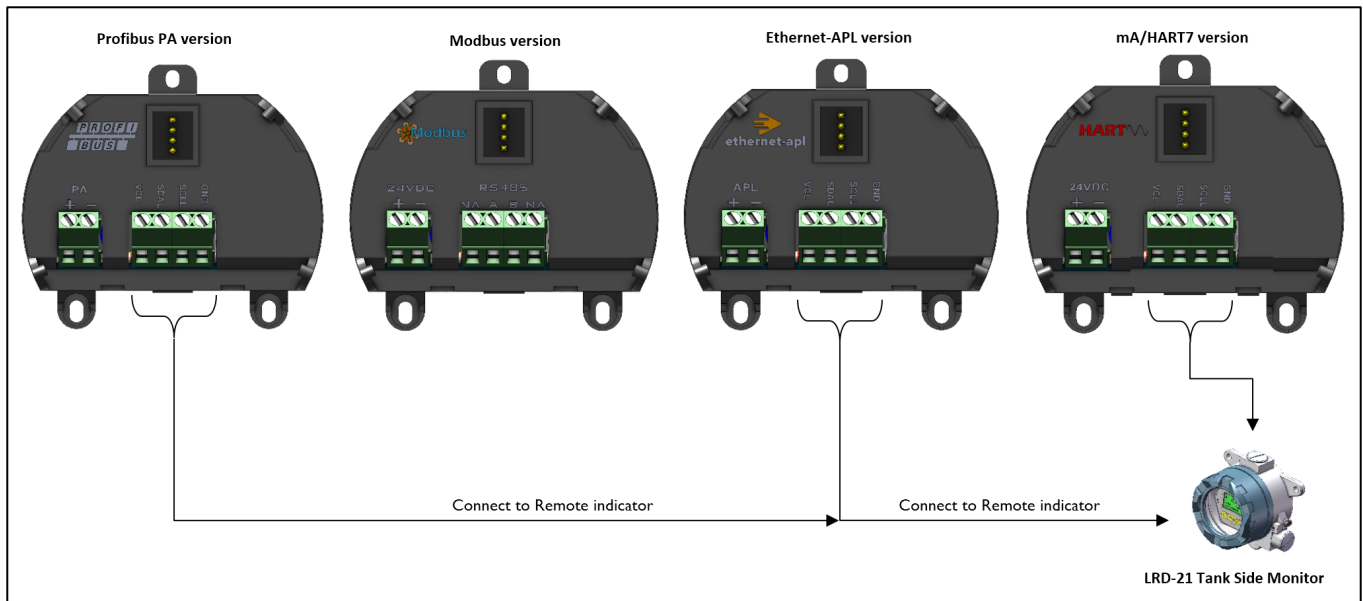
Dimensions

The following dimensional drawings represent only an extract of all possible versions. Detailed dimensional drawings can be downloaded at <https://www.chinasimba.com/downloads.html> "Drawings".

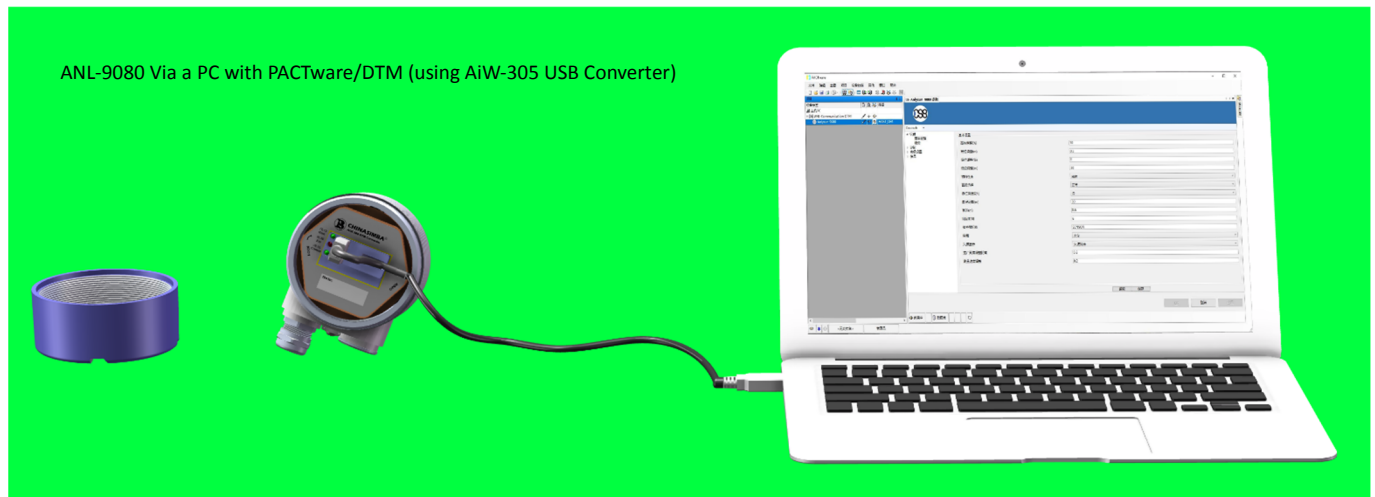




Remote indicator connects for ANL-9080



DTM Adapter for ANL-9080

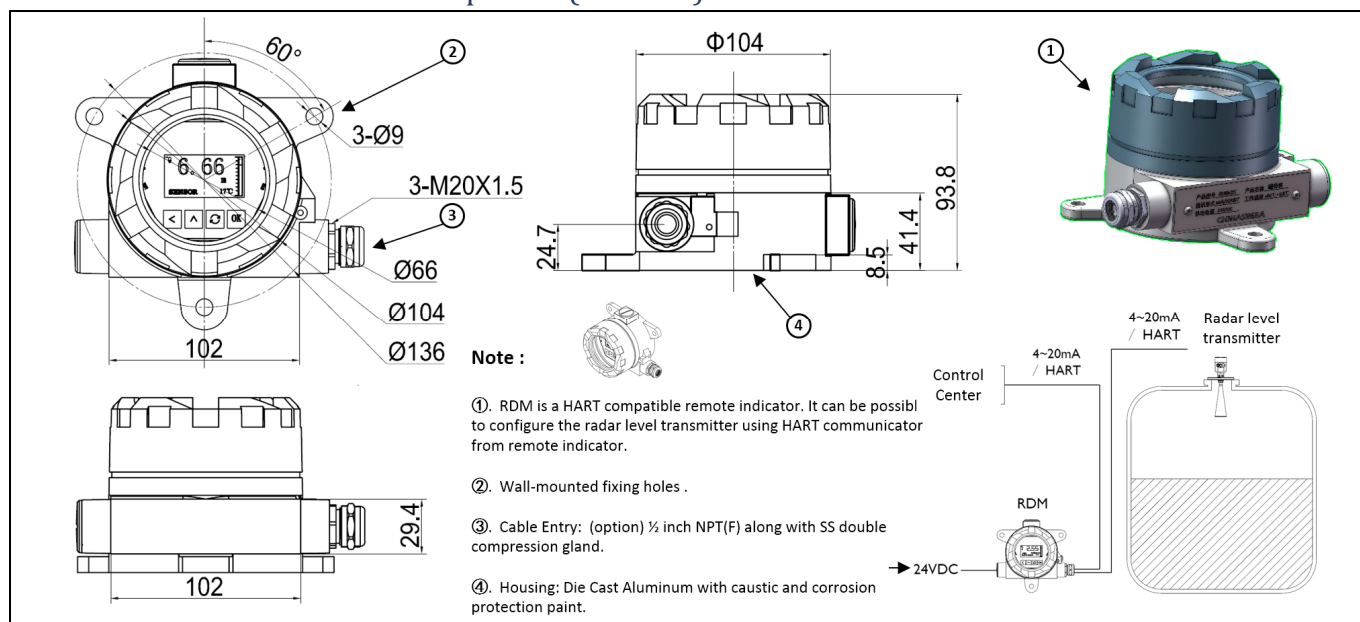


AiW-305 USB Converter Adapter

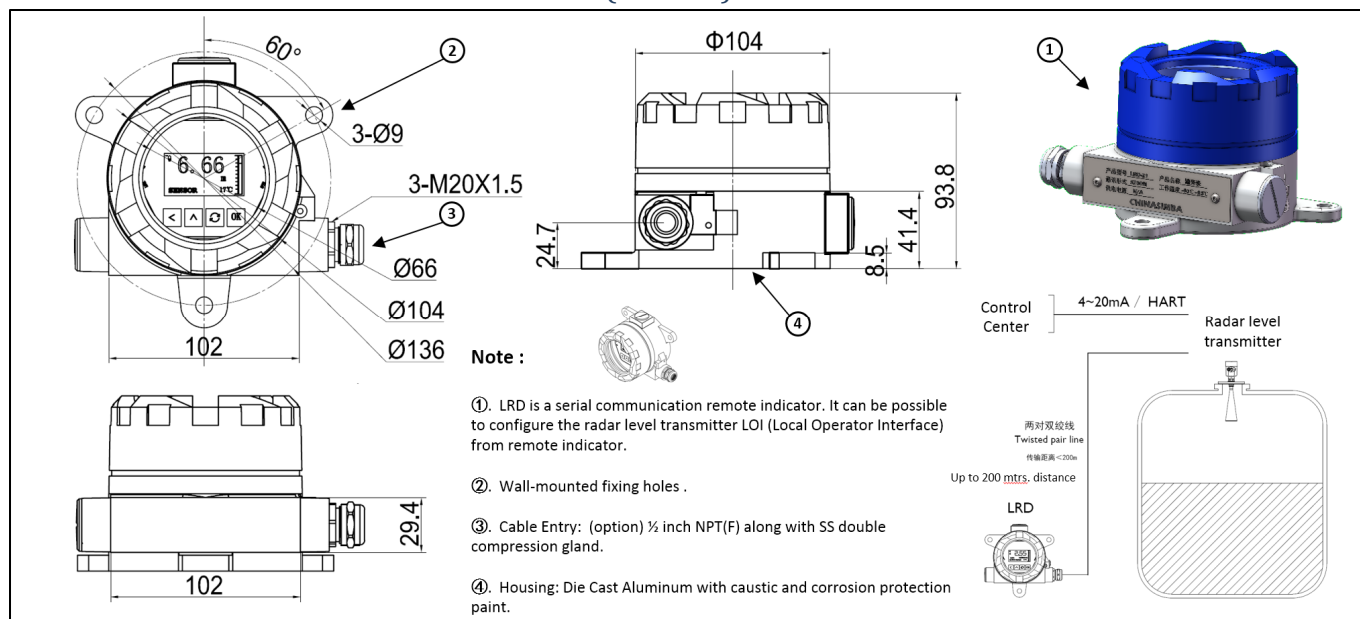


Remote programmer cum Indicator Adapters

Remote indicator with HART compatible (RDM-25)



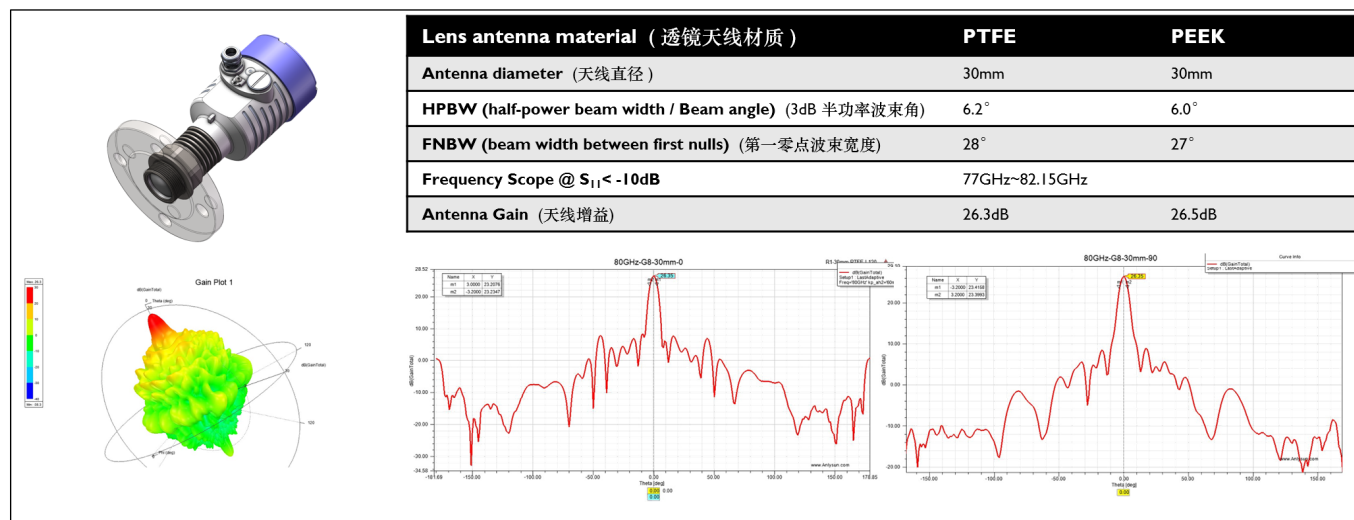
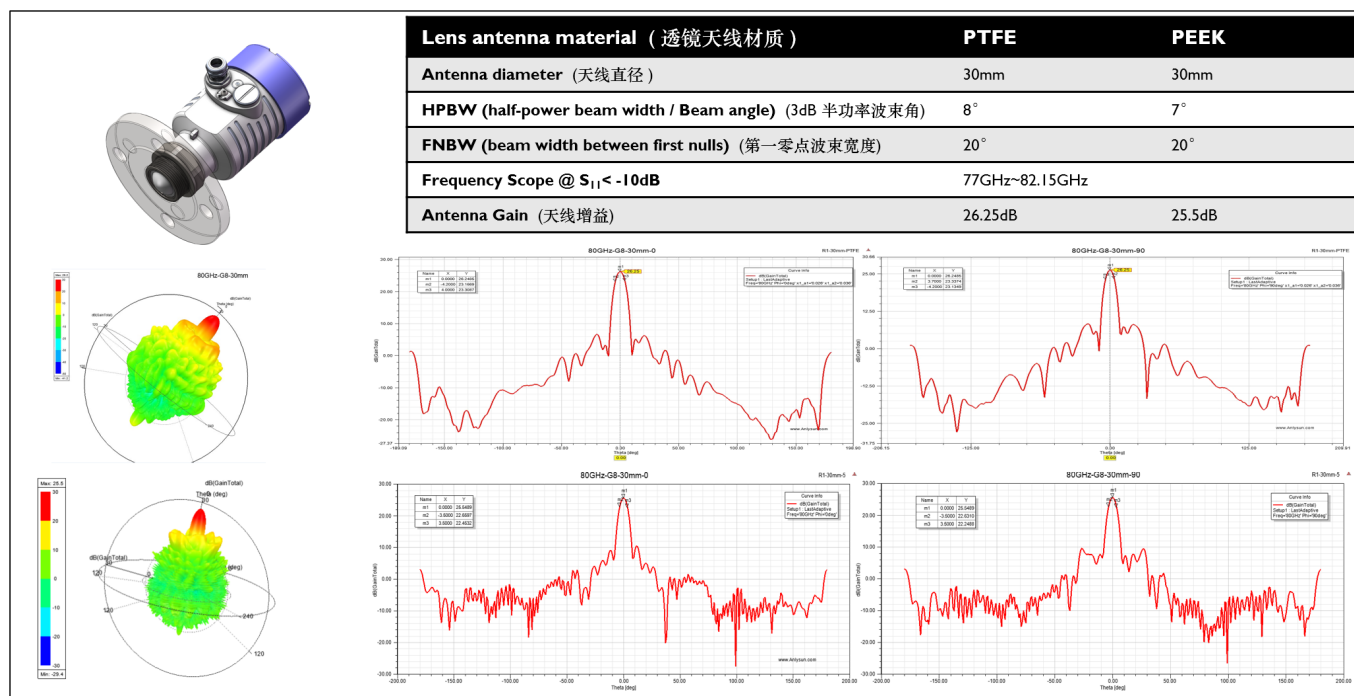
Remote indicator via Serial communication (LRD-21)



Remote indicator via Bluetooth communication

ANL9080 radar level transmitters (with Bluetooth function) can be connected to mobile phone through Bluetooth wireless system. The mobile phone needs to install the RadarMobileManager APP. This is a free registered APP (Android and IOS etc.) software, which can be downloaded and installed directly in major APP Stores, or please contact the relevant product suppliers.

The Radar Antenna Specification of the ANL-9080N30



Thermal simulation graph for the ANL-9080N30

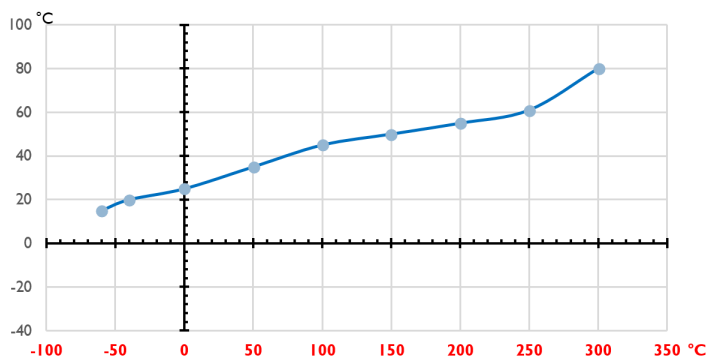
Start Ambient temperature: 25°C
 Initial device housing Temp.: 35°C
 Material properties in tank: Solid, constant heat source
 Ambient wind speed: level 1 wind, 0.3m/s, soft wind
 Surface of tank and device: Solar radiation and stainless steel absorbing wall
 Process connection: Flange height ≥40 cm from the material level in tank
 (including nozzle height)

Model simulation analysis:

This is an analysis of setting up to the maximum allowable temperature value of the material in the tank, when the maximum temperature of the surface of the device shell is maintained at 65 °C Celsius degrees. It's a dynamic thermal equilibrium to be reached.

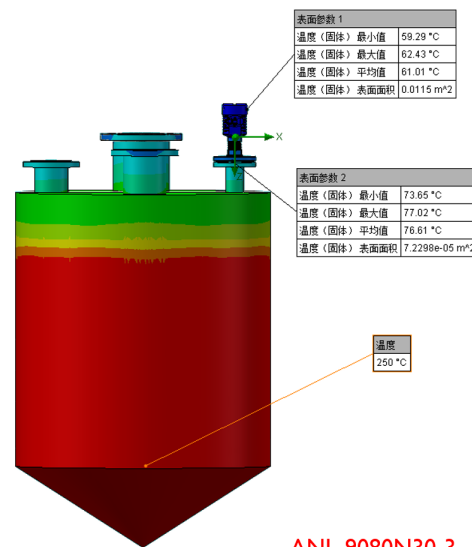


Ambient temperature - Process temperature



The Medium Max.Temp. @ inside tank: 250 °C

250.00
227.48
204.95
182.43
159.91
137.39
114.86
92.34
69.82
47.30
温度 (固体) [°C]
表面图 1: 等高线



ANL-9080N30-3

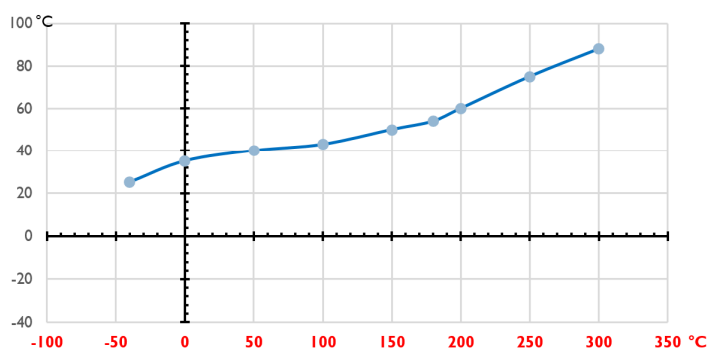
Start Ambient temperature: 25°C
 Initial device housing Temp.: 35°C
 Material properties in tank: Solid, constant heat source
 Ambient wind speed: level 1 wind, 0.3m/s, soft wind
 Surface of tank and device: Solar radiation and stainless steel absorbing wall
 Process connection: Flange height ≥40 cm from the material level in tank
 (including nozzle height)

Model simulation analysis:

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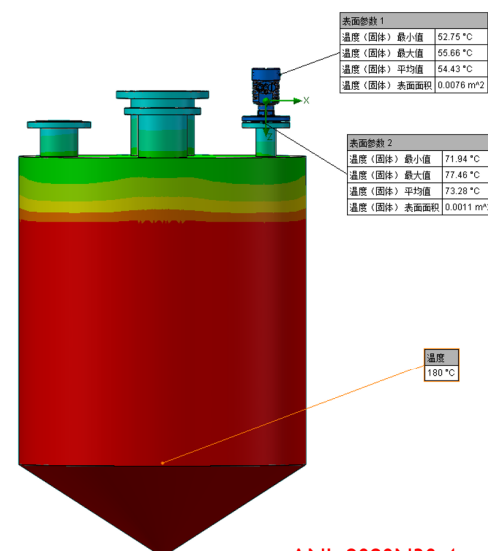


Ambient temperature - Process temperature



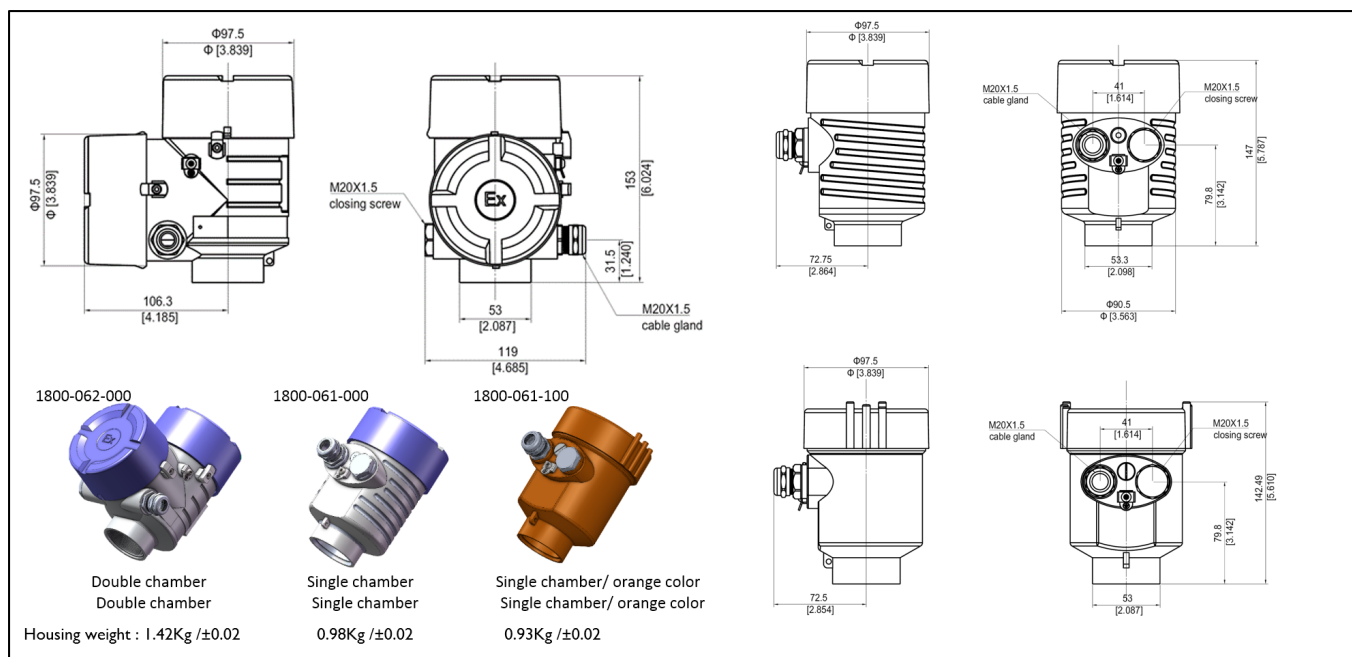
The Medium Max.Temp. @ inside tank: 180 °C

180.00
163.77
147.54
131.32
115.09
98.86
82.63
66.40
50.18
33.95
温度 (固体) [°C]
表面图 1: 等高线

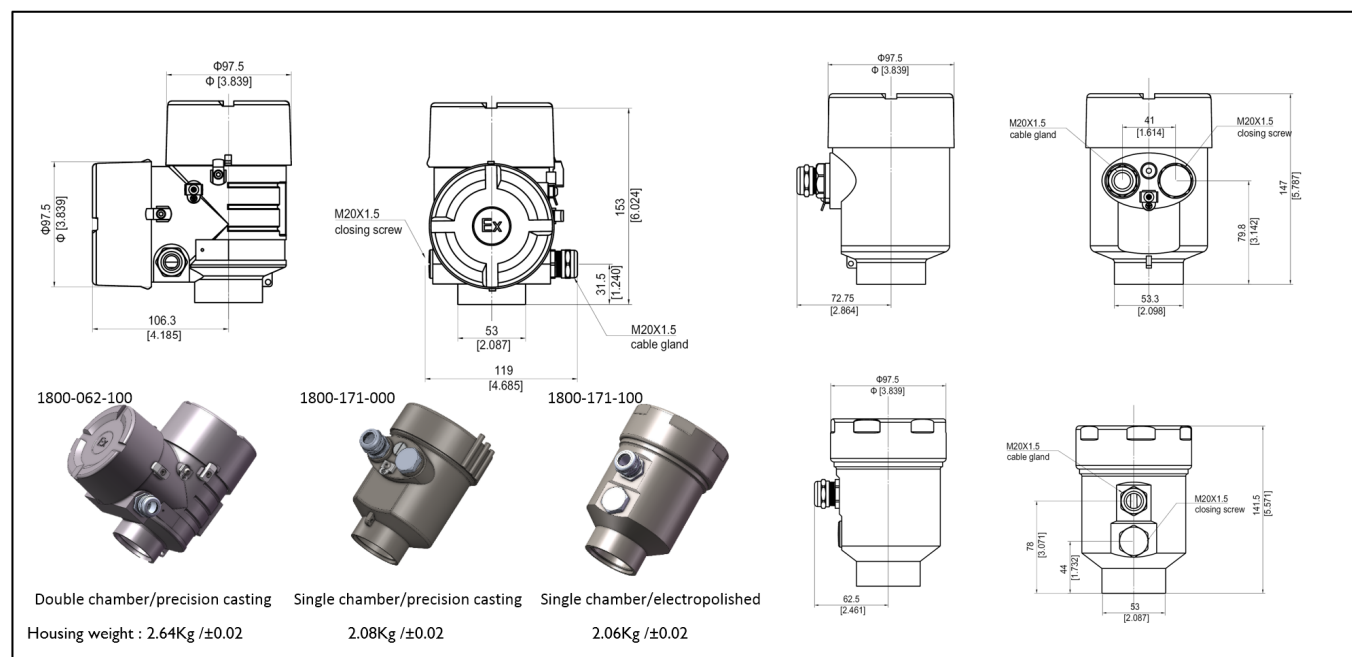


ANL-9080N30-4

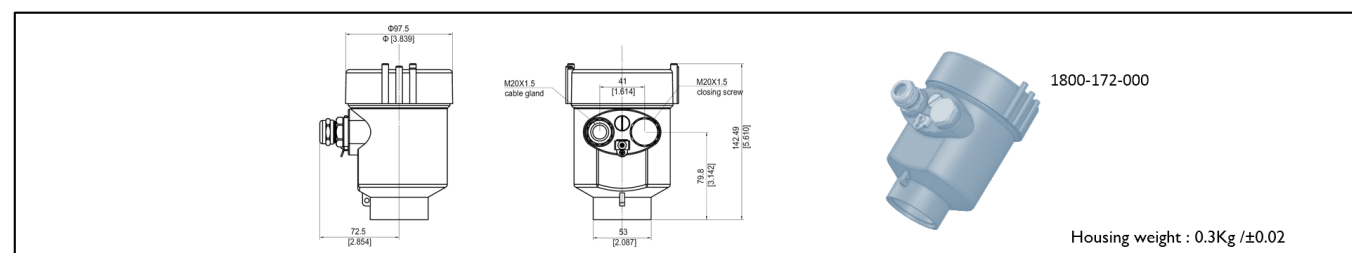
Aluminum housing



Stainless steel housing



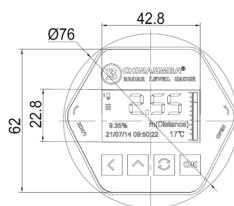
Plastic housing



Indication/Adjustment LOI Adapter

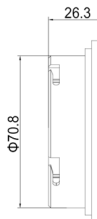
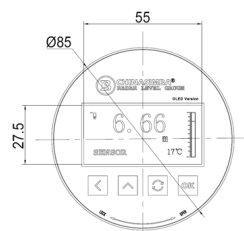
160x80 LCD RGB Backlight Monitor Adapter

Display type: FSTN
View direction: 6 o'clock
Operation temperature : -20°C ... 70°C



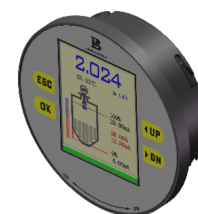
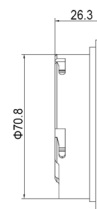
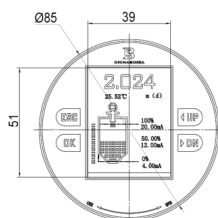
128x64 OLED graphic Monitor Adapter

Display type: OLED
View direction: 180 o'clock
Operation temperature : -55°C ... 80°C



320x240 LCD TFT colors Monitor Adapter

Display type: 2.4" TFT 65K/262K colors
View direction: 6 o'clock
Operation temperature : -20°C ... 70°C



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