

## AiW-4120<sub>MP/MC/MK</sub> ANL-4120<sub>MP/MC/MK</sub>

### 122 GHz Smart Level/Hydrological Radar Transmitters

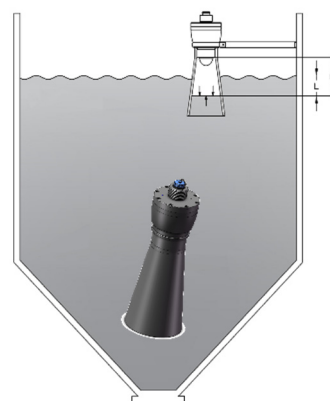
#### Features

- Smart features designed to make life easy
- Communicate via Bluetooth wireless technology
- Advanced diagnostics and Smart Meter Verification
- NAMUR type tested and IP68 / CE / Exia
- Versatile FMCW radar for application flexibility
- Industrial design concept, the appearance of the product fits in natural environment



#### Applications

- Non-contacting radar technology is ideal for a wide range of applications as it is maintenance-free, has a top-down installation that reduces the risk of leakages, and is unaffected by process conditions such as density, viscosity, temperature, pressure.
- ANL/AiW-4120 transmitters are used for non-contact level measurement of liquids and bulk solids, measuring all kinds of liquids, even under high pressure and extreme temperatures, in solvents as well as aggressive liquids, they are also suitable for use in applications with stringent hygiene requirements.
- ANL/AiW-4120 can also measure the lightest to the heaviest of bulk solids with absolute reliability, even in the presence of dust and noise, without being affected by buildup or condensation. Suitable for liquids and bulk solids in simple process conditions.
- ANL/AiW-4120 uses Frequency Modulated Continuous Wave (FMCW) technology and smart algorithms to maximize measurement accuracy and reliability, even in small tanks and challenging fast-filling vessels.
- ANL/AiW-4120 with Flood Protection Cover, This can be critical with media that are highly corrosive, toxic or otherwise dangerous in a spill. The ability to read to the very top of the vessel is often called Overfill Capability.



#### Product Form

AiW-4120MP




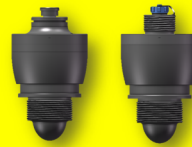
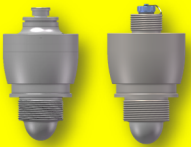

AiW-4120MC



AiW-4120MK



## Specifications

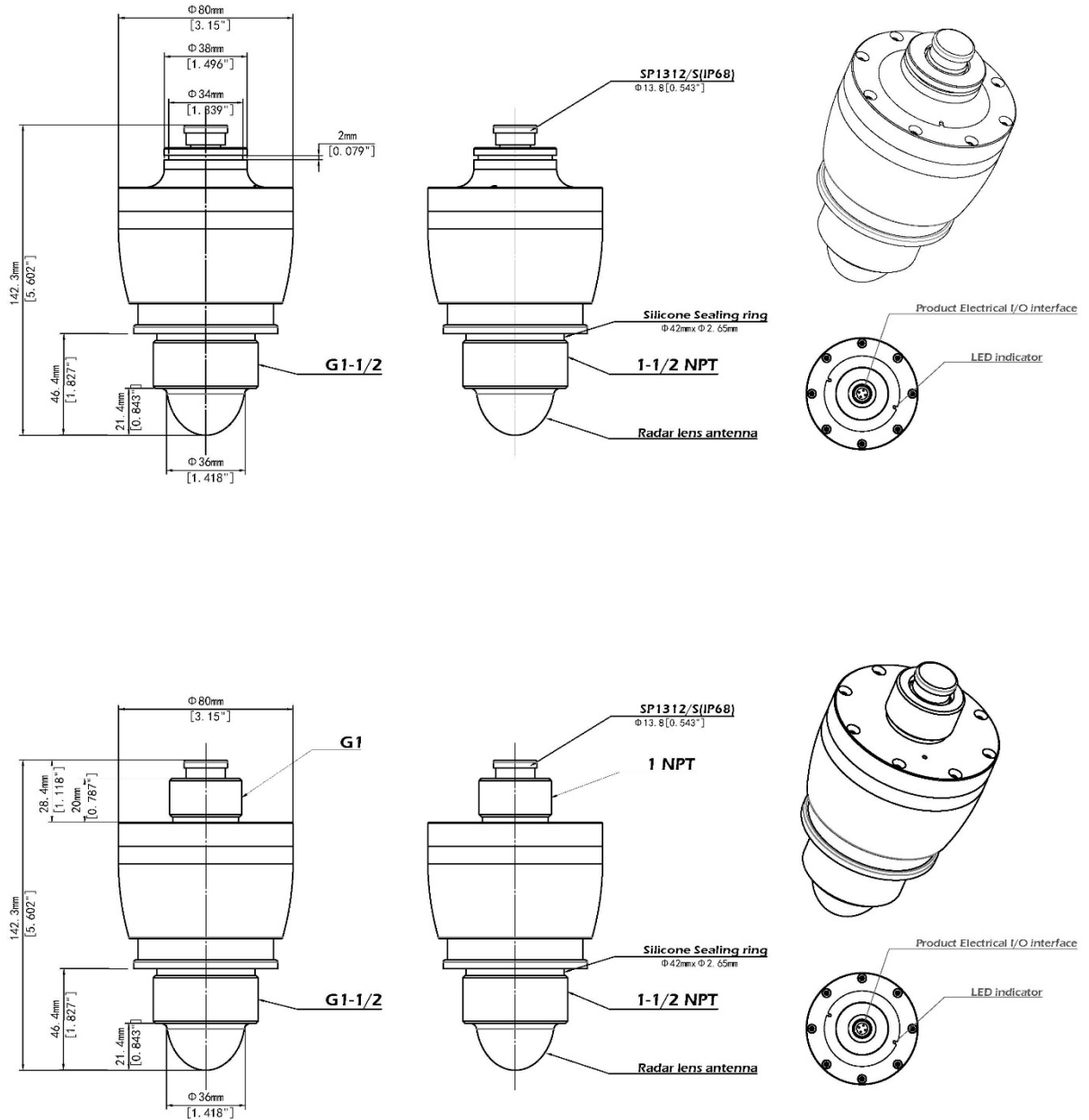
Product No	AiW-4120MP-R	AiW-4120MP-K	AiW-4120MP-A	AiW-4120MP-H	AiW-4120MC-R	AiW-4120MC-K	AiW-4120MC-A	AiW-4120MC-H	ANL-4120MK-R	ANL-4120MK-K	ANL-4120MK-A	ANL-4120MK-H						
Installation method	Threaded				Threaded with Overfill proof(option)				Threaded with Overfill proof(option)									
Appearance Picture																		
Parameter	<p>122 to 123GHz Dynamic FM Sweep Bandwidth 1GHz (122GHz~123GHz: 1GHz)                      or 120 to 123GHz Dynamic FM Sweep Bandwidth 3GHz (120GHz~123GHz: 3GHz)/option                      (The adjustment FM range can be customized according to the ISM requirements of the customer's region)</p>																	
Measuring Frequency																		
Instrument Range	(10/18/30m)			(10/18/40m)			(10/18/30m)			(10/18/40m)			(10/18/30m)			(10/18/40m)		
Dead Band	<200mm(10m/18m range)			<300mm			<200mm(10m/18m range)			<300mm			<200mm(10m/18m range)			<300mm		
Meas. Principle	FMCW Radar System																	
Meas. Resolution	0.05m ( Physical Resolution C/2B = 0.05m )																	
Meas. Accuracy	±1mm (<10m range)/±2mm(18m range)/±4mm(30m range)																	
Temperature Coefficient	±1ppm/°C																	
Antenna Sensor Material	Polyoxymethylene (POM) / (PTFE Customized Option) (The antenna is integrated with the housing)																	
Beam Angle(a)	POM: 6°/ Gain 29dB; PTFE: <6°/ Gain 31dB																	
Output	RS-485	IO-Link	4-20mA	mA/HART 7	RS-485	IO-Link	4-20mA	mA/HART 7	RS-485	IO-Link	4-20mA	mA/HART 7	RS-485	IO-Link	4-20mA	mA/HART 7		
Power Supply	9-38 V DC			16-40 V DC			9-38 V DC			16-40 V DC			9-38 V DC			16-40 V DC		
Process Connection	G2 or G2-1/4 or 2-1/4 NPT(Customized Option) ( Upper threaded G1/1 NPT or Bracket mounted )				G1-1/2 or 1-1/2 NPT(Customized Option) ( Upper threaded G1/1 NPT or Bracket mounted )				G1-1/2 or 1-1/2 NPT(Customized Option) ( Upper threaded G1/1 NPT or Bracket mounted )									
Process Temperature	-40 ... +100 °C																	
Ambient Temperature	-40 ... +85 °C																	
Operating Pressure	POM: -100 to +500 KPa PTFE: -100 to +300 KPa																	
Display/Adjustment	Chinasimba Software: PCManager V1.x, MobileManager V1.x (v1.0.6(IOS)/v1.0.12(Android))																	
Wireless communication	Bluetooth																	
Bluetooth Standard	Bluetooth 4.0																	
Bluetooth Range	25m																	
Output & Protocol	ModBus / SDI-12(Customized Option)		4-20mA	HART7 (Downward Compatible)	ModBus / SDI-12(Customized Option)		4-20mA	HART7 (Downward Compatible)	ModBus		4-20mA	HART7 (Downward Compatible)	ModBus		4-20mA	HART7 (Downward Compatible)		
Fault Output	**		22mA/4mA/20.5mA (option)		**		22mA/4mA/20.5mA (option)		**		22mA/4mA/20.5mA (option)		**		22mA/4mA/20.5mA (option)			
Live Display	Mobile / iPad / PC																	
Housing Material	POM material (PTFE Customized Option)																	
No.of Cable Entries	1 PVC Insulated cable (Aviation connectors)																	
Explosion-proof grade	*** Exia																	
Ingress Protection / CE	IP68 / CE																	
Package Dimensions	267mm x 97mm x 97mm																	
Benefit	<p>Maintenance-free and durable.                      Measurement not affected by build-up or condensation.                      Measures lightest to the heaviest of bulk solids with absolute reliability.                      Suitable for solvents as well as aggressive liquids.                      User friendly adjustments (via Bluetooth) save installation time.                      Sensor active LED indication.                      Ergonomic and environment friendly design.                      Flexibility in output options.                      Suitable for hydrological applications (Lakes, Rivers, Reservoirs).                      The versatile design enables fit for purpose solutions and flexibility in use.</p>  <p>For example, the transmitter can be used in tanks and vessels with small process fittings, corrosive environments, and open air installations.</p>																	
Application	Liquid, Solid																	

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]

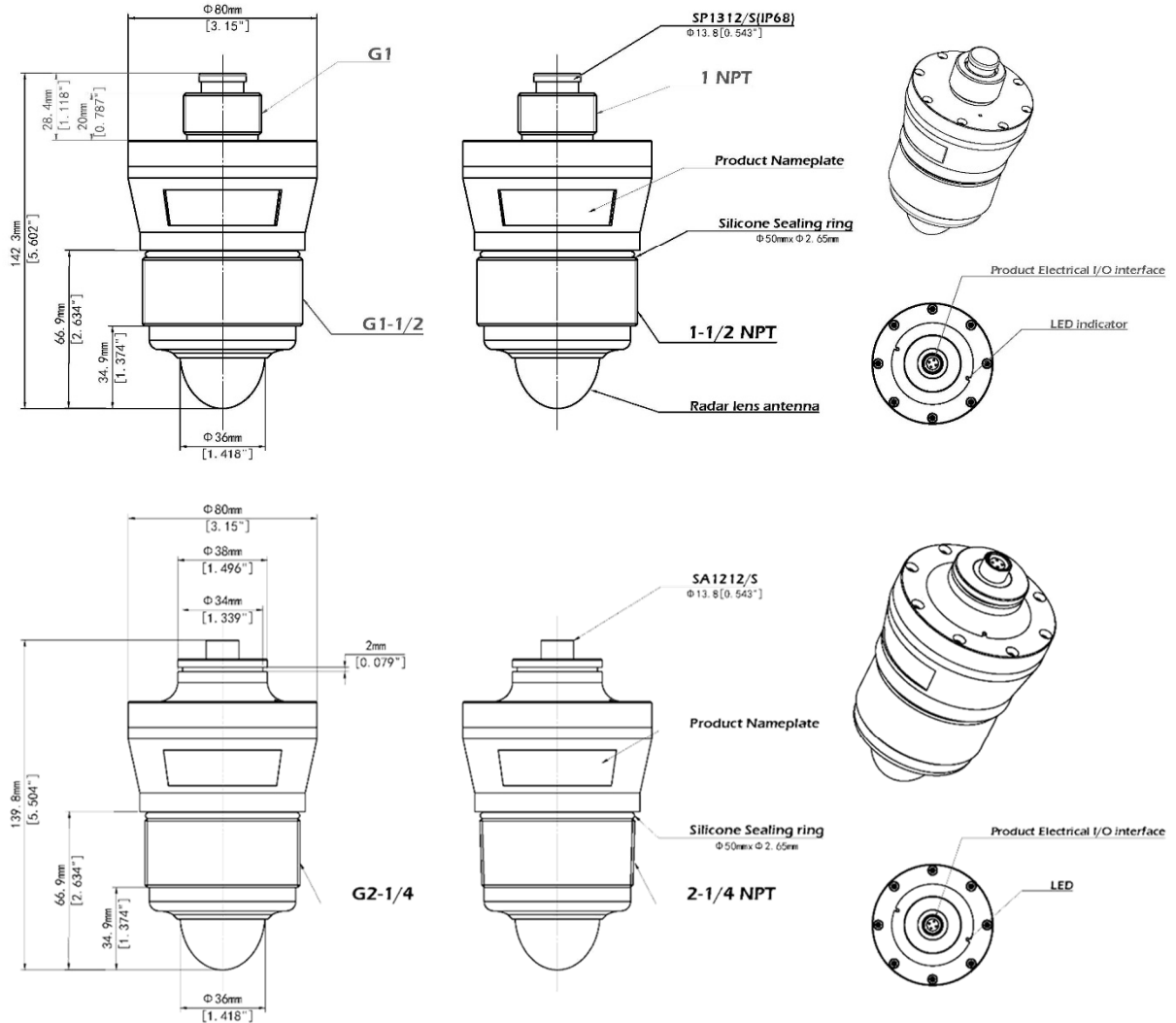
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## ANL/Aiw-4120 Products Dimensions in millimeters

### MC/MK PACKAGE



## MP PACKAGE




Wiring Connection 接线图

PORT	PIN	Color	Signal
	<b>mA only</b> <b>mA HART</b> <b>(2-Wire)</b>	1 Red	V+ 24V
		2 Blue	NA
		3 Yellow	V- 0V
		4 Green	NA
	<b>mA HART</b> <b>(4-Wire)</b>	1 Red	V+ 24V
		2 Blue	mA+ + Active 4-20 mA analog output
		3 Yellow	V- 0V
		4 Green	mA- - Active 4-20 mA analog output
	<b>RS485</b>	1 Red	V+ 24V
		2 Blue	485-A RS485+ communication line
		3 Yellow	0V
		4 Green	485-B RS485- communication line
<b>IO-LINK</b>	1 Red	V+ 24V	
	2 Blue	OUT2 Digital output	
	3 Yellow	V- 0V	
	4 Green	OUT1/IO-LINK Digital output or IO-Link mode	

## ANL/Aiw-4120 Ordering Codes

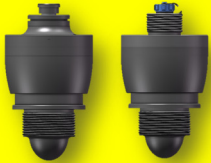
### Ordering Codes ANL-4120MP Liquid version 订货编码

AIW-4120MP	1	2	3	4	5	6	NOTE
LIQUID VERSION 	R						RS485 WITH MODBUS
	D						SDF-12 CUSTOMIZED
	K						ID-LINK
	A						4-20MA ONLY
	H						4-20MA / HART7
		G					UNDER THREADED CONNECTION G2-1/4
		N					UNDER THREADED CONNECTION 2-1/4 NPT
			R				UPPER REED CONNECTION $\phi$ 3.4MMX2
			T				UPPER THREADED CONNECTION G1
				10M			RANGE 10M
				18M			RANGE 18M
				30M			RANGE 30M
				40M			RANGE 40M FOR HART VERSION ONLY
					S		HOUSING MATERIAL PDM
				P		HOUSING MATERIAL PTFE	
						NA	

Sample :

AIW-4120MP-R-G-R-10M-S	LIQUID VERSION, RS485, G2-1/4, UP REED, RANGE 10M, PDM HOUSING
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### Ordering Codes ANL-4120MC Liquid version 订货编码

AIW-4120MC	1	2	3	4	5	6	NOTE
LIQUID VERSION 	R						RS485 WITH MODBUS
	D						SDF-12 CUSTOMIZED
	K						ID-LINK
	A						4-20MA ONLY
	H						4-20MA / HART7
		G					UNDER THREADED CONNECTION G1-1/2
		N					UNDER THREADED CONNECTION 1-1/2 NPT
			R				UPPER REED CONNECTION $\phi$ 3.4MMX2
			T				UPPER THREADED CONNECTION G1
				10M			RANGE 10M
				18M			RANGE 18M
				30M			RANGE 30M
				40M			RANGE 40M FOR HART VERSION ONLY
					S		HOUSING MATERIAL PDM
				P		HOUSING MATERIAL PTFE	
					F	WITH OVERFILL FUNCTION	

Sample :

AIW-4120MC-A-G-R-10M-S	LIQUID VERSION, 4-20MA, G1-1/2, UP REED, RANGE 10M, PDM HOUSING
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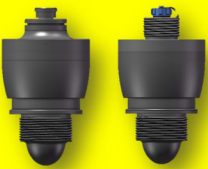
### Ordering Codes ANL-4120MP Solid version 订货编码

ANL-4120MP	1	2	3	4	5	6	NOTE
SOLID VERSION 	R						RS485 WITH MODBUS
	D						SDF-12 CUSTOMIZED
	K						ID-LINK
	A						4-20MA ONLY
	H						4-20MA / HART7
		G					UNDER THREADED CONNECTION G2-1/4
		N					UNDER THREADED CONNECTION 2-1/4 NPT
			R				UPPER REED CONNECTION $\phi$ 3.4MMX2
			T				UPPER THREADED CONNECTION G1
				10M			RANGE 10M
				18M			RANGE 18M
				30M			RANGE 30M
				40M			RANGE 40M FOR HART VERSION ONLY
					S		HOUSING MATERIAL PDM
				P		HOUSING MATERIAL PTFE	
						NA	

Sample :

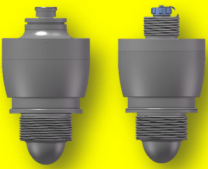
ANL-4120MP-H-G-T-40M-S	SOLID VERSION, 4-20MA/HART, G2-1/4, UP THREADED G1, RANGE 40M, PDM HOUSING
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Ordering Codes ANL-4120MC Solid version 订货编码

ANL-4120MC	1	2	3	4	5	6	NOTE
	R						RS485 WITH MODBUS
	D						SDF-12 CUSTOMIZED
	K						ID-LINK
	A						4-20MA ONLY
	H						4-20MA / HART7
		B					UNDER THREADED CONNECTION G1-1/2
		N					UNDER THREADED CONNECTION 1-1/2 NPT
			R				UPPER REED CONNECTION $\phi 34\text{MM} \times 2$
				T			UPPER THREADED CONNECTION G1
					10M		RANGE 10M
					18M		RANGE 18M
					30M		RANGE 30M
				40M		RANGE 40M FOR HART VERSION ONLY	
					B	HOUSING MATERIAL POM	
					P	HOUSING MATERIAL PTFE	
						NA	

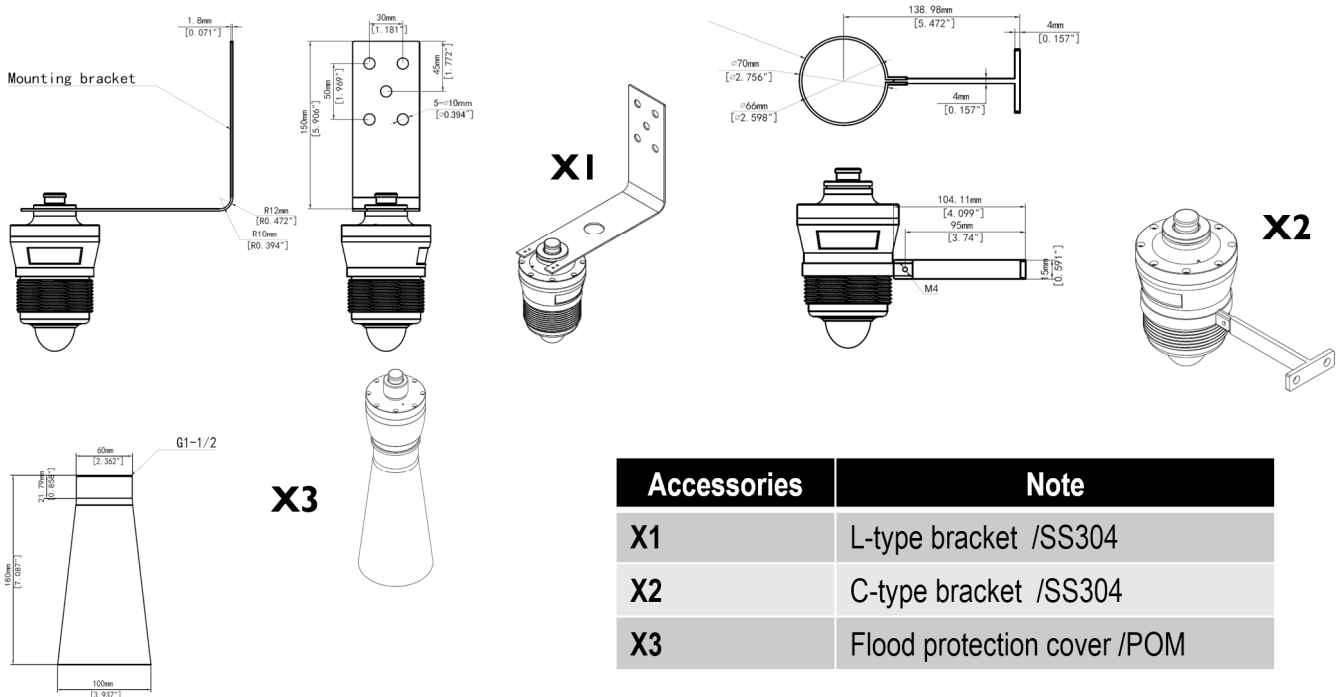
Sample : ANL-4120MC-A-G-R-10M-S SOLID VERSION, 4-20MA, G1-1/2, UP REED, RANGE 10M, POM HOUSING

Ordering Codes 订货编码

ANL-4120MK	1	2	3	4	5	6	NOTE
	R						RS485 WITH MODBUS
	D						SDF-12 CUSTOMIZED
	K						ID-LINK
	A						4-20MA ONLY
	H						4-20MA / HART7
		B					UNDER THREADED CONNECTION G1-1/2
		N					UNDER THREADED CONNECTION 1-1/2 NPT
			R				UPPER REED CONNECTION $\phi 34\text{MM} \times 2$
				T			UPPER THREADED CONNECTION G1
					10M		RANGE 10M
					18M		RANGE 18M
					30M		RANGE 30M
				40M		RANGE 40M FOR HART VERSION ONLY	
					304	HOUSING MATERIAL SS304	
					316	HOUSING MATERIAL SS316	
						F WITH OVERFILL FUNCTION (LIQUID ONLY)	

Sample : ANL-4120MC-A-G-R-10M-304 SOLID VERSION, 4-20MA, G1-1/2, UP REED, RANGE 10M, SS304 HOUSING

## ANL/Aiw-4120 Mounting accessories



**X1**: L-type bracket /SS304. Dimensions: 1.0mm [0.071"], 30mm [1.181"], 40mm [1.575"], 15mm [0.591"], 5-10mm [0.394"], 138.98mm [5.472"], 4mm [0.157"], 70mm [2.756"], 66mm [2.598"], 4mm [0.157"], 104.11mm [4.099"], 95mm [3.74"], M4, 1.5mm [0.0591"].

**X2**: C-type bracket /SS304.

**X3**: Flood protection cover /POM. Dimensions: 1.0mm [0.039"], 60mm [2.362"], 100mm [3.937"], G1-1/2.

Accessories	Note
X1	L-type bracket /SS304
X2	C-type bracket /SS304
X3	Flood protection cover /POM

For more information contact your regional sales representative.

[sales@chinasimba.com](mailto:sales@chinasimba.com)

<https://www.chinasimba.com/>

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