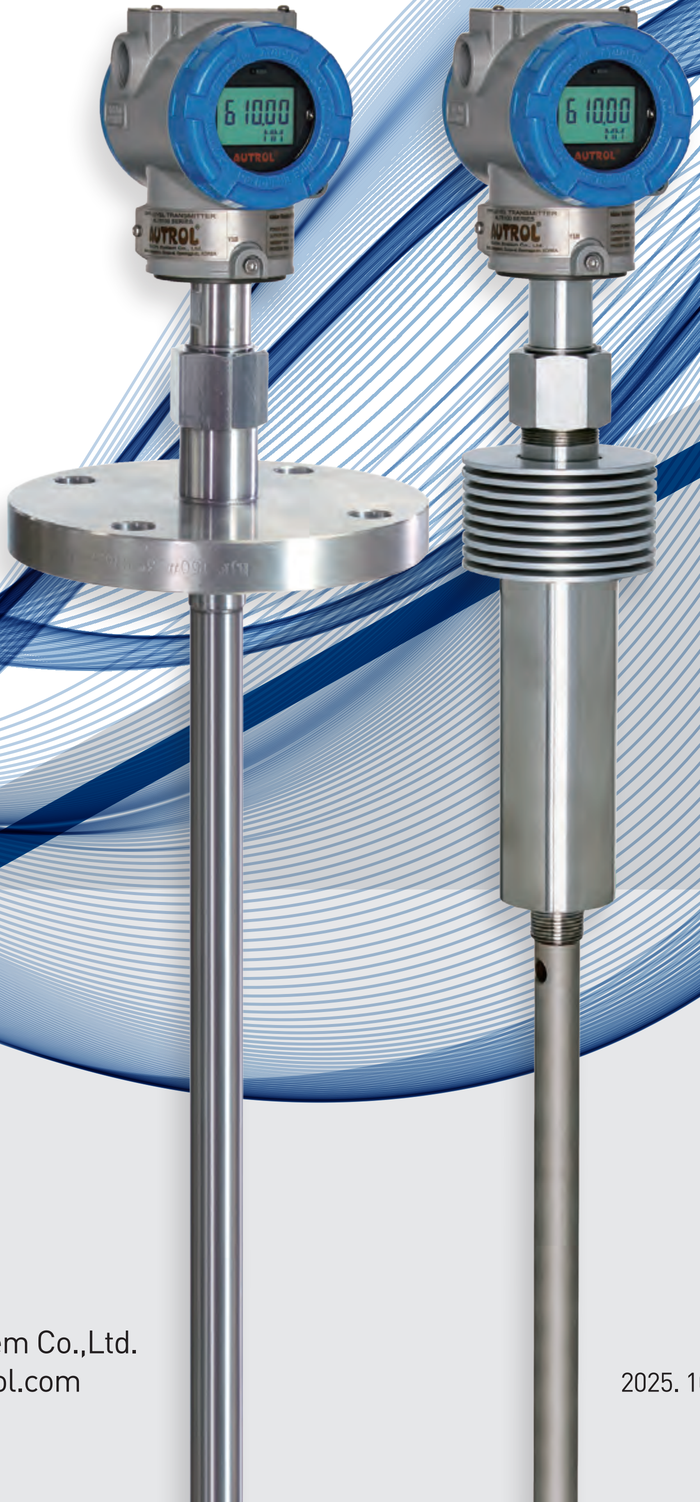
Doc. No. : C6100-E05B

IP EAC(TR CU)

Guided Wave Radar(TDR) Level Transmitter

ALT 6100

Guided wave radar measurement
Various Liquid Available
Convenient Maintenance



AUTROL®
Manufacturer : DUON System Co.,Ltd.
Brand : AUTROL® www.autrol.com

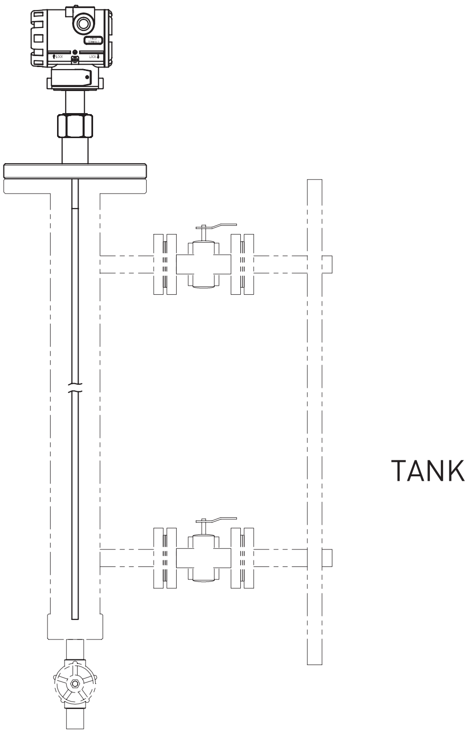
2025. 10

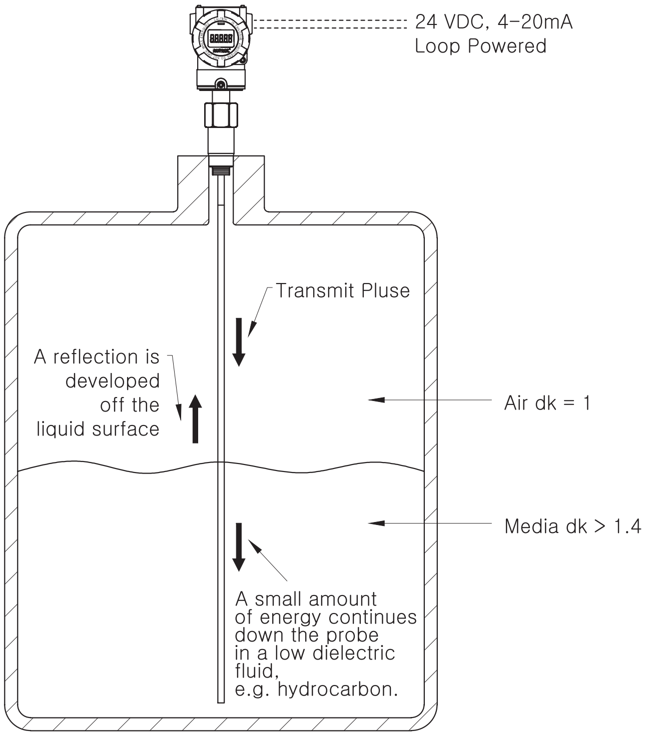
ALT **6100**

Overview

The ALT-6100 is a time domain reflectometer (TDR) configured for level sensing. It measures the round-trip time for a pulse to propagate long a transmission line (or probe) to the surface of a liquid and reflect back. The propagation time is independent of air temperature, pressure and humidity, and the precise location of the pulse reflection depends only on the location of the liquid's surface, independent of the liquid's dielectric constant.

Basic Configuration & Measurement Principle





Function

- FMeasures accurately on materials with dielectric (Dk) as low as 1.4
- Guided wave radar measurement for up to 3.0 mm accuracy
- Measures level and interface on challenging applications including foam
- Trouble-free operation since the transmitter is virtually unaffected by dust, vaper,
- Interfering obstacles, and turbulence. It is even suitable for small or oddly shaped tanks

Applications

- Power Plant
- Petro-chemical
- Water treatment plant
- Aerospace Industry
- Paper
- Steel

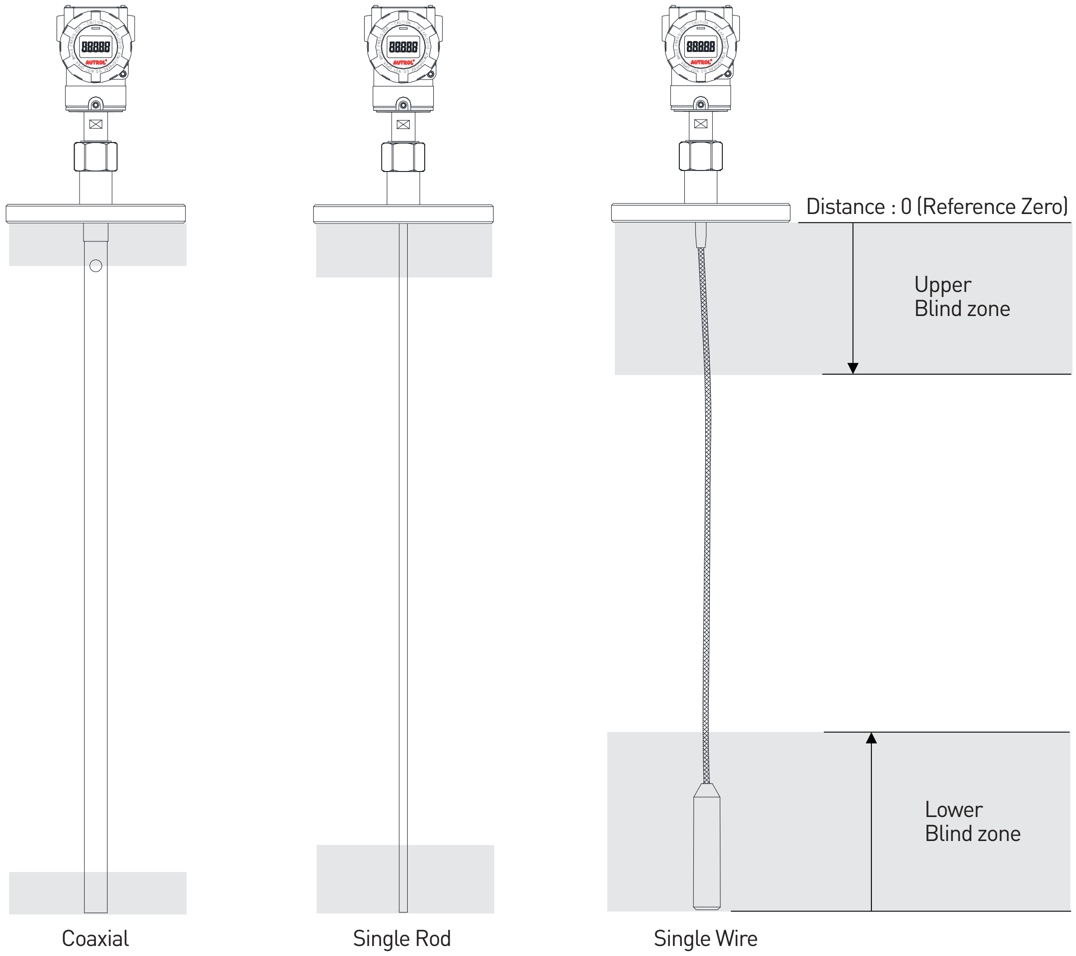
Specification

Division	Coaxial Probe	High Temp.&Pressure Probe	Wire Probe*	Rod Probe*
Shape				
Measuring Range[1]	0.1 ~ 4 meters	0.2 ~ 4 meters	0.3 ~ 20 meters	0.1 ~ 3 meters
Probe Detail Type(Size)	ø 25.4	ø 25.4	ø 6(Sinker : ø 30)	ø 9
Process Pressure	-1 ~ 70 bar	-1 ~ 250 bar	-1 ~ 70 bar	
Process Temperature	-40 ~ 100 °C	-40 ~ 300 °C	-40 ~ 100 °C	
Accuracy	±3 mm	±5 mm	±3 mm	
Power	16 ~ 45 VDC			
Signal Output	4 ~ 20 mA(Analog Signal), HART Digital Signal			
Dk value Availability	Min 1.4 (1.4 ≤)			
Dk value	Low / Medium / High	Medium / High	Medium / High	Medium / High
Obstacles	Better	Better	Normal	Normal
Probe Flexibility	X	X	O	O
Cramped Space	Normal	Normal	Best	Better
Velocity of Flow	Better	Better	Normal	Better
Remote Install	O	O	O	O
	Max. 8 meters	Max. 8 meters	Δ*	Max. 8 meters
Temperature Resistance	Low / Medium	Medium / High	Low / Medium	Low / Medium

* Need to discuss about general specifications in advance with manufacturer

1) Measuring Range is based on water measurement and may vary depending on the measurement medium.

The transmitter has two blind zones: the upper part from the transmitter head, and the lower part at the ends of the probe, where the measuring signal is weak/impossible in certain areas, as shown in the figure below. Depending on the type of probe, the area is different, as shown in the table.



[Figure] Blind Zone

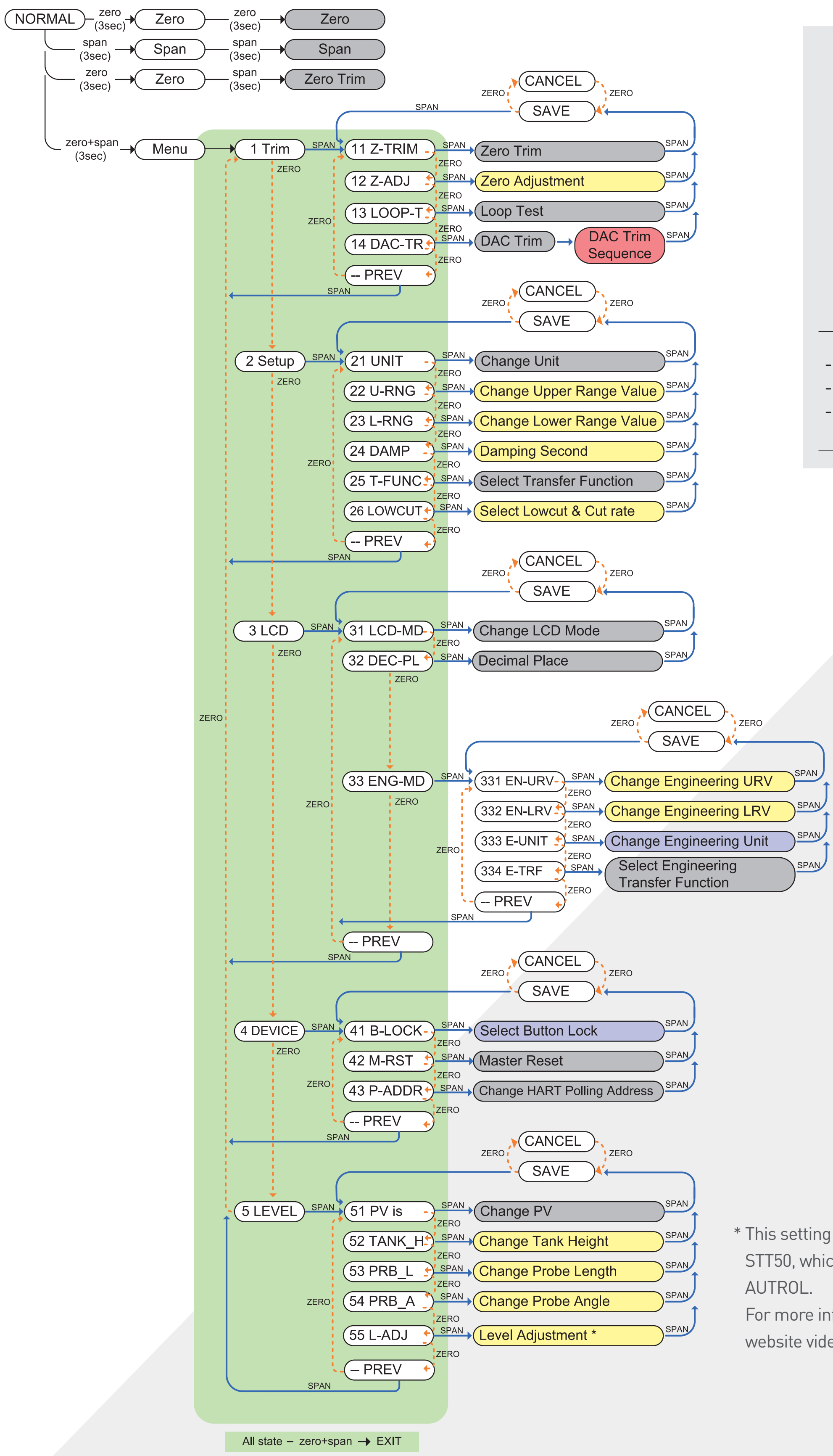
	Dielectric Constant	Coaxial	Single Rod	Single Wire	Twin Rod	Twin Wire
Upper Blind Zone	80	100mm	100mm	300mm	100mm	300mm
Lower Blind Zone	80	100mm	70mm	300mm	100mm	300mm

[Table] Blind Zone by Probe Type

* The blind zone will be slightly increased when the Dielectric Constant(Dk) is lower than 80.

* To use the blind zone as a special requirement, consult the manufacturer.

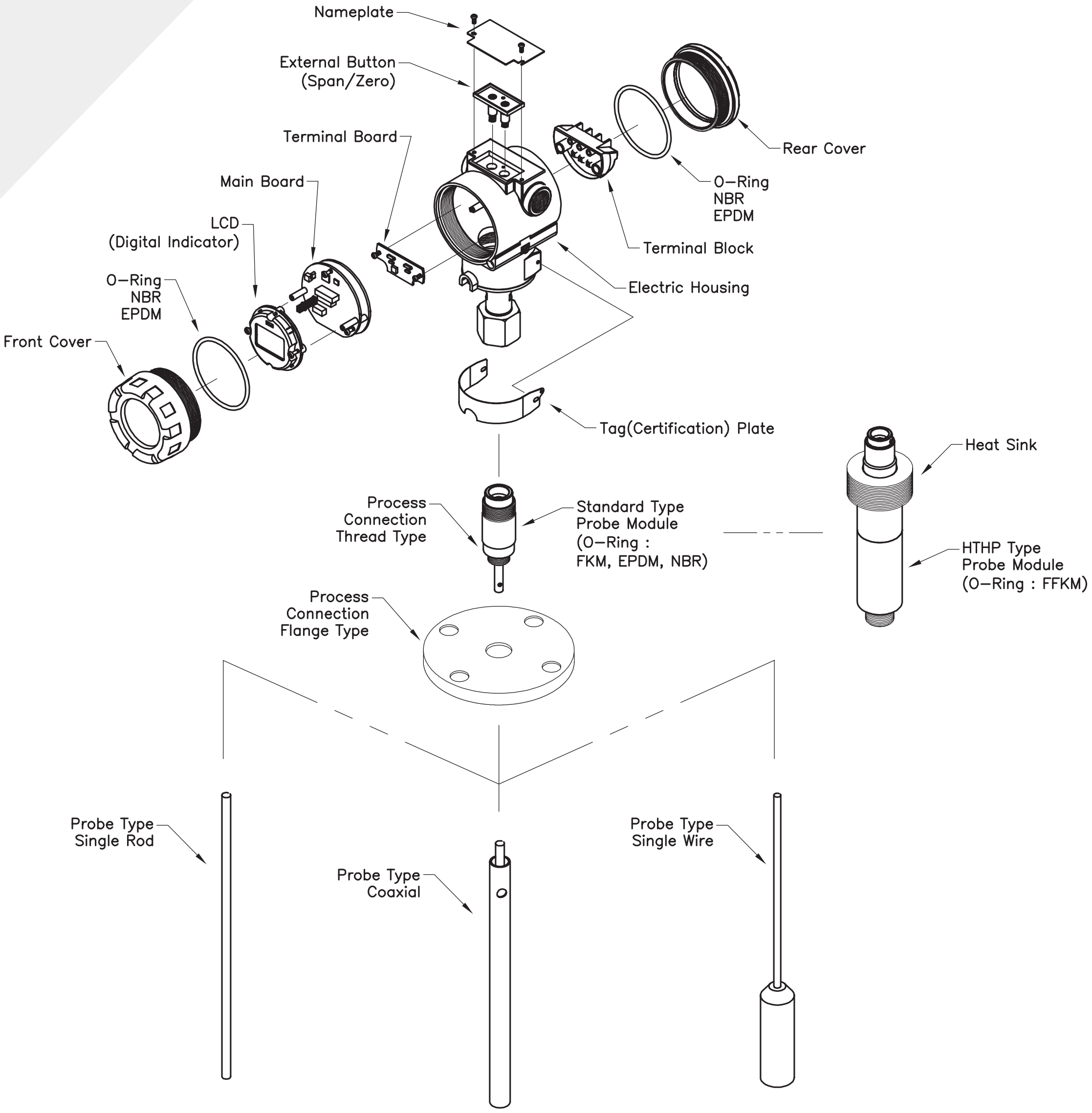
Button Menu Tree



- Moving within Menu : Zero
- Moving to below Menu : Span
- Moving Top Menu : Zero+Span

* This setting can also be done with STT30 and STT50, which are dedicated programs for AUTROL.
For more information, please refer to the website video or YouTube video.

Exploded drawing of ALT6100



Hazardous Location Certifications(option)

- KCs Flameproof / Dust Ignition-proof K1 Code :
  Ex d IIC T3 / T4 IP67 (Tamb=-20 °C ~+60 °C)
  Power Supply : 16~45 VDC
  Output : 4~20 mA or HART
  Process Temp. : T3 (-40 °C ~ +165 °C)
  T4 (-40 °C ~ +130 °C)
  Ex tD A20 T135 °C IP67
  Power Supply : 16~45 Vdc
  Output : 4~20 mA or HART

- EAC Flameproof R1 Code :
  1Ex d IIC T6~T4 Gb, IP66
  Power Supply : 16~45 VDC
  Output : 4~20 mA or HART
  T6(Tamb = -55°C ~ 60 °C)
  T5(Tamb = -55°C ~ 65 °C)
  T4(Tamb = -55°C ~ 70 °C)

- EAC Intrinsic Safety R2 Code :
  0Ex ia IIC T5~T4 Ga, IP66
  Power Supply : 16~45 VDC
  Output : 4~20 mA or HART
  T5(Tamb = -55°C ~ 40 °C)
  T4(Tamb = -55°C ~ 70 °C)

Ordering Information

Model	Description
ALT6100	Guided Wave Radar Level Transmitter

Code	Measurement
-L	Level
-D	Distance
-I*	Interface

Code	Probe Type
1W	Single Wire Probe
1R*	Single Rod Probe
2W*	Twin Wire Probe
2R*	Twin Rod Probe
CX	Coaxial Probe

Code	Process Connection – size / type	
A21	ANSI2" #150 RF, FF	Flange Type
A23	ANSI2" #300 RF, FF	
A26	ANSI2" #600 RF, FF	
A29	ANSI2" #900 RF, FF	
A31	ANSI3" #150 RF, FF	
A33	ANSI3" #300 RF, FF	
A36	ANSI3" #600 RF, FF	
A39	ANSI3" #900 RF, FF	
A41	ANSI4" #150 RF, FF	
A43	ANSI4" #300 RF, FF	

Ordering Information

Code	Process Connection – size / type	
A46	ANSI4" #600 RF, FF	Flange Type
A49	ANSI4" #900 RF, FF	
J51	JIS 50A 10K RF, FF	
J52	JIS 50A 20K RF, FF	
J81	JIS 80A 10K RF, FF	
J82	JIS 80A 20K RF, FF	
J10	JIS 100A 10K RF, FF	
J11	JIS 100A 20K RF, FF	
D21	DIN 50 PN10/PN16	
D22	DIN 50 PN25/PN40	
D31	DIN 80 PN10/PN16	
D32	DIN 80 PN25/PN40	
D41	DIN 100 PN10/PN16	
D42	DIN 100 PN25/PN40	
TN1	1-½" NPT	Thread Type
TN2	1" NPT	
TG1	G1-½"	
TG2	G1"	
S*	Special	

Code	Process Temperature & Pressure
S	Standard (-40 ~ 100°C below & -1 ~ 70 bar below)
HP	High Temperature & High Pressure (-40 ~ 300°C below & -1 ~ 250bar below)

Code	Material of Construction		
	Wire Probe	Rigid Rod Probe	Coaxial Probe
S	304 SST	304 SST	304 SST
T	316 SST*	316 SST	316 SST

Code	Sealing O-ring Material
V	FKM (-25~200 °C)
E	EPDM (-40~150 °C)
K	FFKM (-25~300 °C)
N*	NBR (-25~100 °C)

Code	Hazardous Location Certifications
K0	Maker Standard (Waterproof : IP66/IP67)
K1	KCs Flameproof / KCs Dust lgnition-proof Approval
R1	EAC Flameproof
R2	EAC Intrinsic Safety
R3	EAC Flameproof, Intrinsic Safety

Code	Electrical Connection / Housing material
1	1/2-14NPT / Epoxy-Polyester Painted Aluminum
2	G1/2 Adapter / Epoxy-Polyester Painted Aluminum
X	Special / Epoxy-Polyester Painted Aluminum

Code	Option		
M1	LCD Indicator(5-Digit)	M2	Back Light LCD Indicator
LPI	Lightning Protector (Internal)		
BA	Stainless Steel Bracket (Angle type) with SST Bolts		
BF	Stainless Steel Bracket (Flat type) with SST Bolts		
ST	Stainless Steel Housing		

Model	Probe Length
□□□...□(with unit)	Enter probe length (meter/ft/mm/inch...)

Code	Remote housing cable
-N	Non
-R□□□...□(with unit)	Remote Housing Cable (meter/ft/mm/inch...)

* Note : “*” consult manufacturer before order

Example :

1. Standard Model (Thread Type)

ALT6100 L CX N TN2 S S V K0 1 — M1 — 1.5M — N

Measurement	Level
Probe Type	Coaxial Probe
Mounted Flange Material	Non (Process Connection : Threaded connection)
Process Connection	1 inch NPT
Process Temperature / Pressure	Standard (-40~100°C, -1~70bar)
Material of Construction	Coaxial Probe : 304 SST
O-ring Material	FKM
Mounted Flange Material	Non (Process Connection : Threaded connection)
Hazardous Location Certifications	Maker Standard (Waterproof:IP66/IP67)
Electrical Connection	1/2" - 14 NPT Female
Option	LCD Indicator (5 digits)
Probe Length	1.5 M
Remote Housing Cable	Non

2. Standard Model (Flange Type)

ALT6100 L CX S A21 S S V K0 1 — M1 BA — 1.5M — R3M

Measurement	Level
Probe Type	Coaxial Probe
Mounted Flange Material	304 SST
Process Connection	2 inch ANSI 150# RF
Process Temperature / Pressure	Standard (-40~100°C, -1~70bar)
Material of Construction	Coaxial Probe : 304 SST
O-ring Material	FKM
Hazardous Location Certifications	Maker Standard (Waterproof:IP66/IP67)
Electrical Connection	1/2” - 14 NPT Female
Option	LCD Indicator (5 digits) Stainless Steel Bracket (Angle Type with SST Bolts)
Probe Length	1.5 M
Remote Housing Cable	3 M

3. High Temperature & Pressure Model (Thread Type)

ALT6100 L CX N TN2 S K K0 1 M1 BA —1.5M—R3M

Measurement	Level
Probe Type	Coaxial Probe
Mounted Flange Material	Non(Process Connection : Threaded connection)
Process Connection	1 inch NPT
Process Temperature / Pressure	High Temperature & Pressure (-40~300°C, -1~250bar)
Material of Construction	Coaxial Probe : 304 SST
O-ring Material	FFKM
Hazardous Location Certifications	Maker Standard (Waterproof:IP66/IP67)`
Electrical Connection	1/2" - 14 NPT Female
Option	LCD Indicator (5 digits) Stainless Steel Bracket (Angle Type with SST Bolts)
Probe Length	1.5 M
Remote Housing Cable	3 M

4. High Temperature & Pressure Model (Flange Type)

ALT6100 L CX S A21 HP S V K0 1 M1 BA—1.5M—R3M

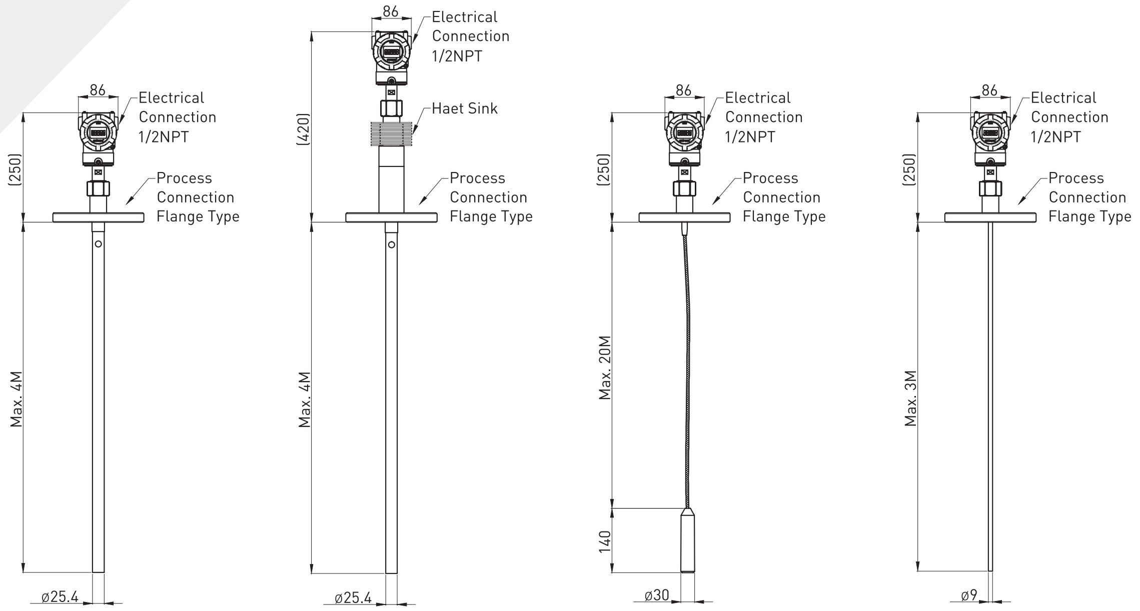
Measurement	Level
Probe Type	Coaxial Probe
Mounted Flange Material	304 SST
Process Connection	2 inch ANSI 150# RF
Process Temperature / Pressure	High Temperature & Pressure (-40~300°C, -1~250bar)
Material of Construction	Coaxial Probe : 304 SST
O-ring Material	FFKM
Hazardous Location Certifications	Maker Standard (Waterproof:IP66/IP67)
Electrical Connection	1/2" - 14 NPT Female
Option	LCD Indicator (5 digits) Stainless Steel Bracket (Angle Type with SST Bolts)
Probe Length	1.5 M
Remote Housing Cable	3 M

* Consults Manufacturer for more detail.

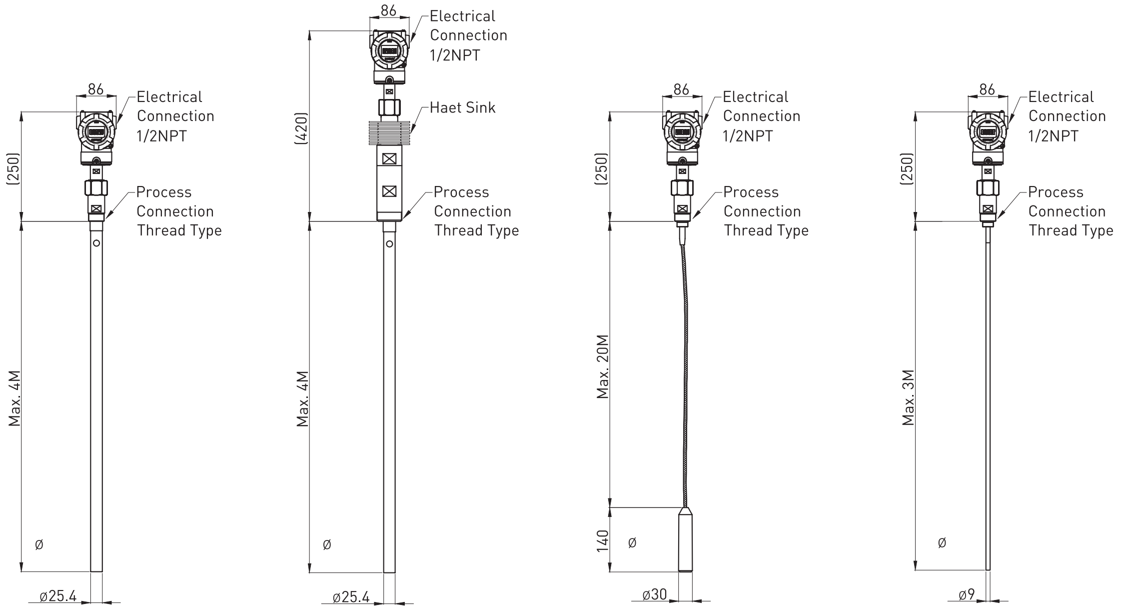
Dimensions of Transmitter (mm)

Dimensions of Transmitter may vary depending on the option selected.
Please contact the production company for more details.

[1. Flange Type]



[2. Thread Type]



DUON System Co., Ltd.

298-29, Gongdan-ro, Gunpo-si, Gyeonggi-do, Korea 15809
T : +82. 31. 389. 6100   F : +82. 31. 429. 7200   E : autrol@duon.co.kr
www.autrol.com

AUTROL®, AUTROLTM are trade mark of smart transmitter brand series to measure Pressure, Temperature and Level, which is manufactured & owned by DUON System Co., Ltd(hereafter DUON) since 1989. AUTROL®, AUTROLTM series also provide services of electric appliance installation, repair of electric, magnetic measuring instruments, electric appliance repair, repair of instruments and appliances for measuring and testing, repair of computer hardware, repair of electronic application machines and apparatus, repair of instruments and appliances for rotating, repair of electric power distribution machines and apparatus, repair of control machines and apparatus, computer hardware maintenance and administration, computer hardware installation. APT3500-Differential and high accuracy pressure Transmitter APT3100-Differential pressure Transmitter, APT3200-Gauge & Absolute pressure Transmitter, ATT2X00 series-Temperature Transmitter, AI100-Field Indicator, ALT6XX0 series-Level Transmitter.