



# POSITION TRANSMITTER 315

## GEAR BOX WITH POT/I CONVERTER TYPE

### FEATURES

- DIAL OR LCD INDICATOR INTEGRABLE
- 2-WIRE SYSTEM AVAILABLE
- EASY TO ASSEMBLE & CALIBRATION AT FIELD SITE
- WIDTH CALIBRATION RANGE
- TRANSMISSION DEVICE OF TANK GAUGE ARE SUITABLE



### SPECIFICATIONS

#### ■ GENERAL

**Range of potentiometer :** 10K $\Omega$   
**Accuracy of potentiometer :**  $\pm 0.5\%$  F.S.  
**Housing Material :** Aluminium alloy with epoxy resined  
**Cable Entry :** 1/2" NPT (F)  
**Housing Rating :** Exd IIB T4, IP67  
**Wiring Terminals :** For wires AWG14~22  
**Ambient Temp. :** -5 to +60 $^{\circ}$ C, 90% RH max.  
**Mounting :** Combined to gauge head or mounted on 2" stanchion for separated converter

#### ■ 315A / B

**Output :** 4~20 mADC, 2-wire system  
**Measuring range :** 0~3m, 5m, 6m, 9m, 10m, 12m, 15m, 18m, 20m  
**Accuracy :**  $\pm 0.1\%$  F.S. (At 20 $^{\circ}$ C)  
**Linearity :**  $\pm 0.1\%$  F.S.  
**Burnout Protection :** Upscale  $\geq 23$ mA  
**Power Supply :** 10~30V DC  
**Load Resistance :** 700 $\Omega$  at 24V DC  
**Zero Adjuster :** 0~25% adjustable by VR for 315B  
 0~30% adjustable from keys for 315C  
**Span Adjuster :** 30~100%  
**Response Time :** 0.1 Sec (0~90%)  
**Isolation :** 250 Vrms (Between Input / Output)  
**Electric Protection :** EEx ia IIC T6  
**Temp. Coefficient :**  $\pm 0.02\%$ / $^{\circ}$ C

#### ■ ANALOG INDICATOR FOR 315B

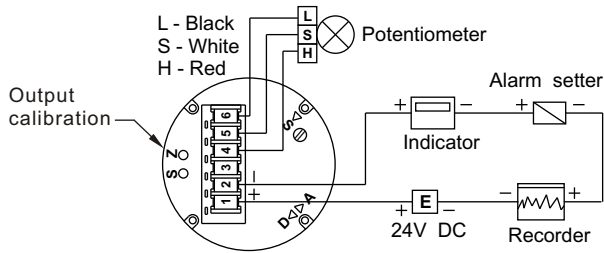
**Dial :** 240 $^{\circ}$  circular arc scale  
**Scale Length :** 136 mm  
**Input :** 4~20 mA DC  
**Zero Adjuster :** Pointer axis adjustable  
**Calibration :** Adjuster on Converter  
**Accuracy :**  $\pm 1.0\%$  F.S.  
**Housing :** ABS resin material Integrated to converter

#### ■ LCD DISPLAY FOR 315C

**LCD display :** 5 Digits (99999), 9mm(0.35")  
**Programming display :** 8 Digits (99999999), 5mm(0.2")  
**Display updated :** 2 sec / cycle for rate (adjustable)  
**Decimal setting :** Selectable from keys  
**Measure unit :** %, m, cm, mm, feet, inch  
**Output signal :** 4 ~ 20mADC loop powered  
**Maximum load :** 600 ohms at 24VDC for current output type  
**Zero / Span :** Possibility to be adjusted by engineer mode  
**Damping rate :** 1~9 sec adjustable  
**Power supply :** 10~36VDC 2-wire system for loop powered type  
**Accuracy :**  $\pm 0.10\%$  F.S. (Without sensor error)  
**Linearity :** Better than 0.5%  
**Output response time :** Six seconds ( typical )  
**Device output ripple :** Less than 0.25% of full scale for a fully stable sensor input

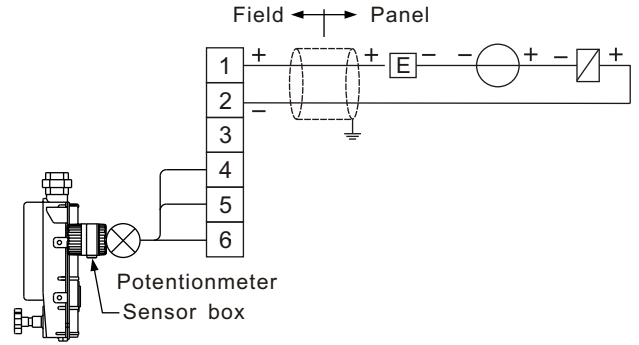
# WIRING CONNECTIONS

## 315A / B



**NOTE:** When the direction of output range is upside down, the potentiometer terminals L/H should be reversed as well.

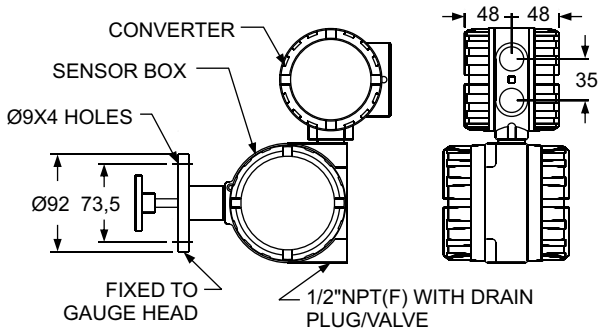
## 315C



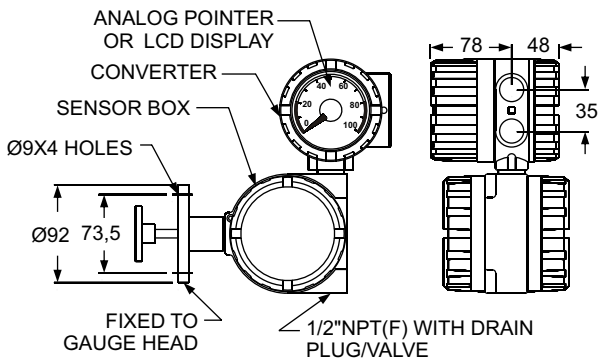
## DIMENSIONS

m/m

### WITHOUT INDICATOR (315A-00)

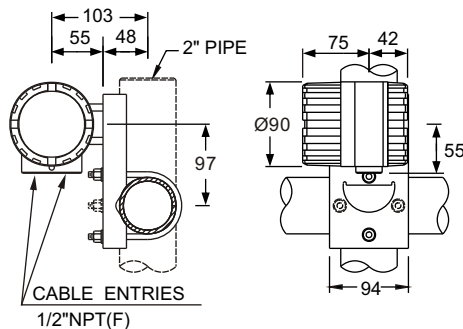


### WITH INDICATOR (315B/C-00)



### SEPARATION CONVERTER (315 □ -1)

(Enclosure with mounting bracket)



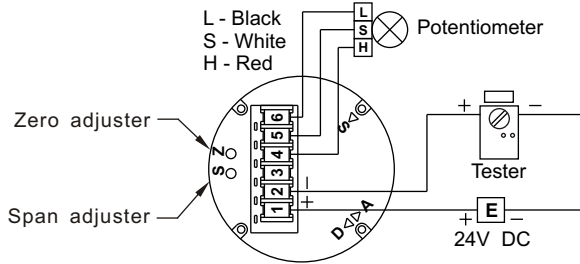
**Note:** Both indicating meter and mounting bracket of converter can be rotated by 90° and are suitable to be mounted on vertical/horizontal pipes.

## MODEL SELECTION

ITEMS	CODE	SPECIFICATIONS
① MODEL	315A	Position transmitter
	315B	Analog indicating position transmitter
	315C	LCD indicating position transmitter
② TYPE OF CONVERTER	-0	Standard (Integration type)
	-1	Separation type (Mounted on 2" stanchion)
	-2	To be specified
③ LINK CONNECTOR OF SENSOR BOX	0	Standard (Fixed to 511/512 series)
	1	To be specified
④ ACTUATION LEVER	0	Standard (Doers's 510/511 are suitable)
	1	Magnetic coupler (Hi-pressure version are suitable)
	2	To be specified (Varec / E+H / Tokyo keiso....etc.)
⑤ OUTPUT	-A	4~20mA DC (2-wire system)
	-B	Resistance (3-wire)
	-C	To be specified
⑥ CABLE ENTRY	A	1/2"NPT(F)
	B	1/2"NPT(F) with 3/4"NPT(F) Adapter
	C	To be specified
⑦ ENCLOSURE / POTECTION	A	Weather-proof, IP67
	B	Exd II B T4/T6, IP67
	C	To be specified
⑧ DRAIN VALVE (OPTIONAL)	A	Not required (With plug only)
	B	With a manual drain valve
	C	With an Auto-drain valve
	D	To be specified
⑨ MEASURING RANGE	-03	0~3M
	-30	0~30M
	-XX	To be specified
⑩ EXTRA TREATMENT	A	Not required
	B	Special finished
	C	To be specified

# CALIBRATION

## ■ 315A ( WITHOUT INDICATOR )

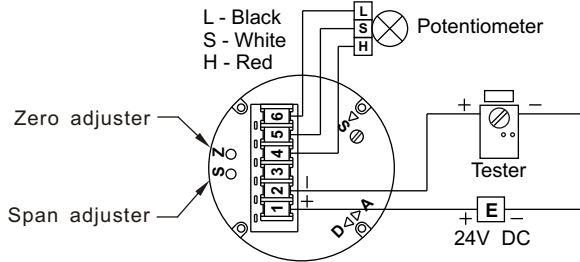


### WHEN CORRECTING THE OUTPUT SIGNAL:

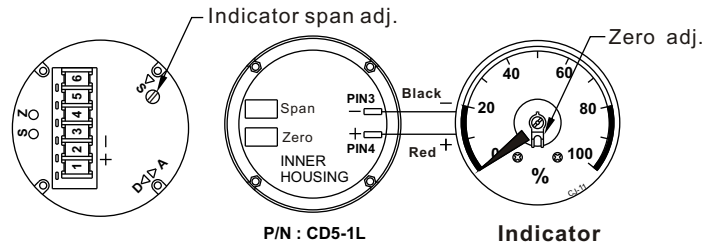
1. Turn on the cover of housing.
2. Remove the number first and second loop wiring from the terminal board.
3. Connect the power and ammeter (or generator of signal).
4. Use zero /span adjuster to set value.
5. After receiving the correct signal, put back all the loop wires and cover to their or original status.

## ■ 315B ( WITH INDICATOR )

### □ OUTPUT CALIBRATION



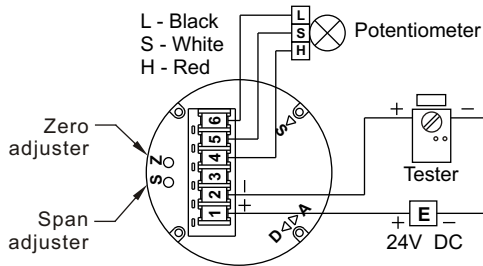
### □ INDICATOR CALIBRATION



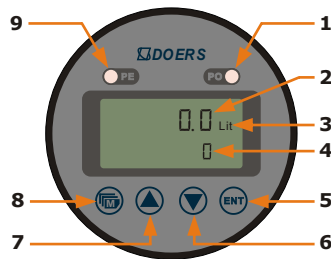
### CAUTION :

Before calibrating, check other related devices whether or not to carry-on above - mentioned correcting procedure, especially at the danger / explosion - proof area at the system operating.

## ■ 315C ( WITH LCD INDICATOR )



To correct the output signal, select the desired level / figure directly from the LCD indicator panel at field site.



1. Output message
2. Level range
3. Measuring unit : %, m, cm, mm, feet, inch
4. Units for programming
5. ENT Key : Button used to confirm setting or go back to menu
6. Down Key : Button used to decrease values or go back to menu
7. UP Key : Button used to increase values or go to prior menu

8. Menu Key : Button used to switch different display modes or menu
9. Error message for loop power

# OPTIONAL ACCESSORIES

## ■ MANUAL DRAIN VALVE

PART NO.	CONNECTION	MATERIAL
AD304-02	1/4"NPT(F)	304SS
AD304-04	1/2"NPT(F)	304SS
AD316-02	1/4"NPT(F)	316SS
AD316-04	1/2"NPT(F)	316SS
AD300-XX	To be specified	

## ■ AUTO-DRAIN VALVE



PART NO.	CONNECTION
AD402-02	1/4"PT(F)
AD402-03	3/8"PT(F)
AD402-04	1/2"PT(F)
AD402-XX	To be specified

The specifications are subject to change without prior notice.

## DOERS TECHNOLOGY CORPORATION

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