

Linhai Yida Electronics Co., Ltd

Rudder Angle Indicator (FD-7) Manual

I . General

rudder angle transmitter DZ-319 adopts high-precision angle sensor , generating $\pm 10\text{V}$ voltage signal output; rudder angle indicator 45C-V is a moving coil type which indicates $\pm 0\sim 45^\circ$ rudder angle.

II . Technical Parameters

Working Volt: DC22 \sim 32V (standard DC24V)

Working Temp: -10 \sim 60 $^\circ\text{C}$

Range: $\pm 0\sim 45^\circ$

Deviation: $< 1^\circ$

Anti-fog Class: 65

III. Installation & Debugging

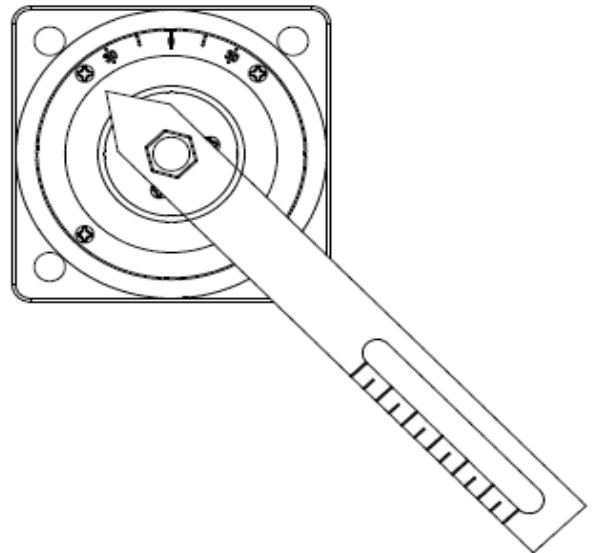
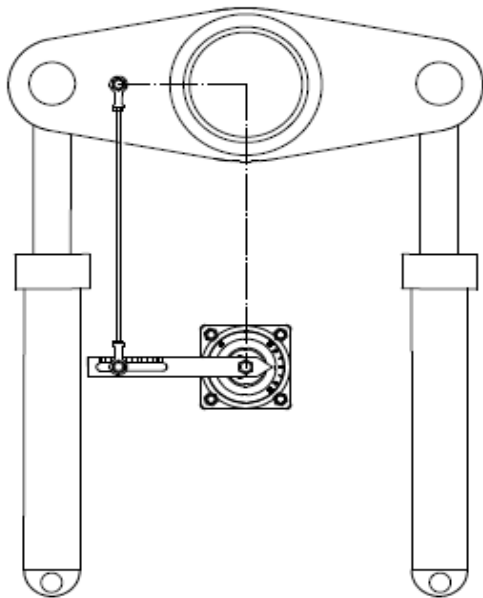
1. Transmitter Installation: connect the tie rod with transmitter DZ-319, and turn is left or right to check whether the indicator 45C-V show the direction accordingly. If opposite, change the signal-output cable. Position the transmitter by using mounting plate until the indication is correct.
2. 0 $^\circ$ check: place the rudder blade at 0 $^\circ$, adjust the transmitter to 0 $^\circ$ (Note: the 0 $^\circ$ of rudder blade and transmitter must be correctly checked, or the precision will be reduced) .
later, install 45C-V indicator : connect the power to (DC24V IN) cable (must be correct).
Next, connect the four cables of transmitter to meter, red for +24V OUT, black for -24V OUT, blue and green for $\pm 10\text{V}$ signal.
Turn power on after finishing the correct connection, the indicator and transmitter will perform the same angle.
(note: the 0 $^\circ$ has been checked before leaving factory, please don't adjust it again).
3. $\pm 45^\circ$ adjustment: place the rudder blade at full degree, check the indicator and adjust the tie rod to make sure the $\pm 45^\circ$ correct.
4. The 0 $^\circ$ of rudder blade and transmitter must be correctly checked, otherwise left the indication will differ from the right indication to a large extent.
5. One dimmer device (adjustable resistor) is equipped with the indicator for controlling the light inside.

Linhai Yida Electronics Co., Ltd

IV. Trouble Shooting

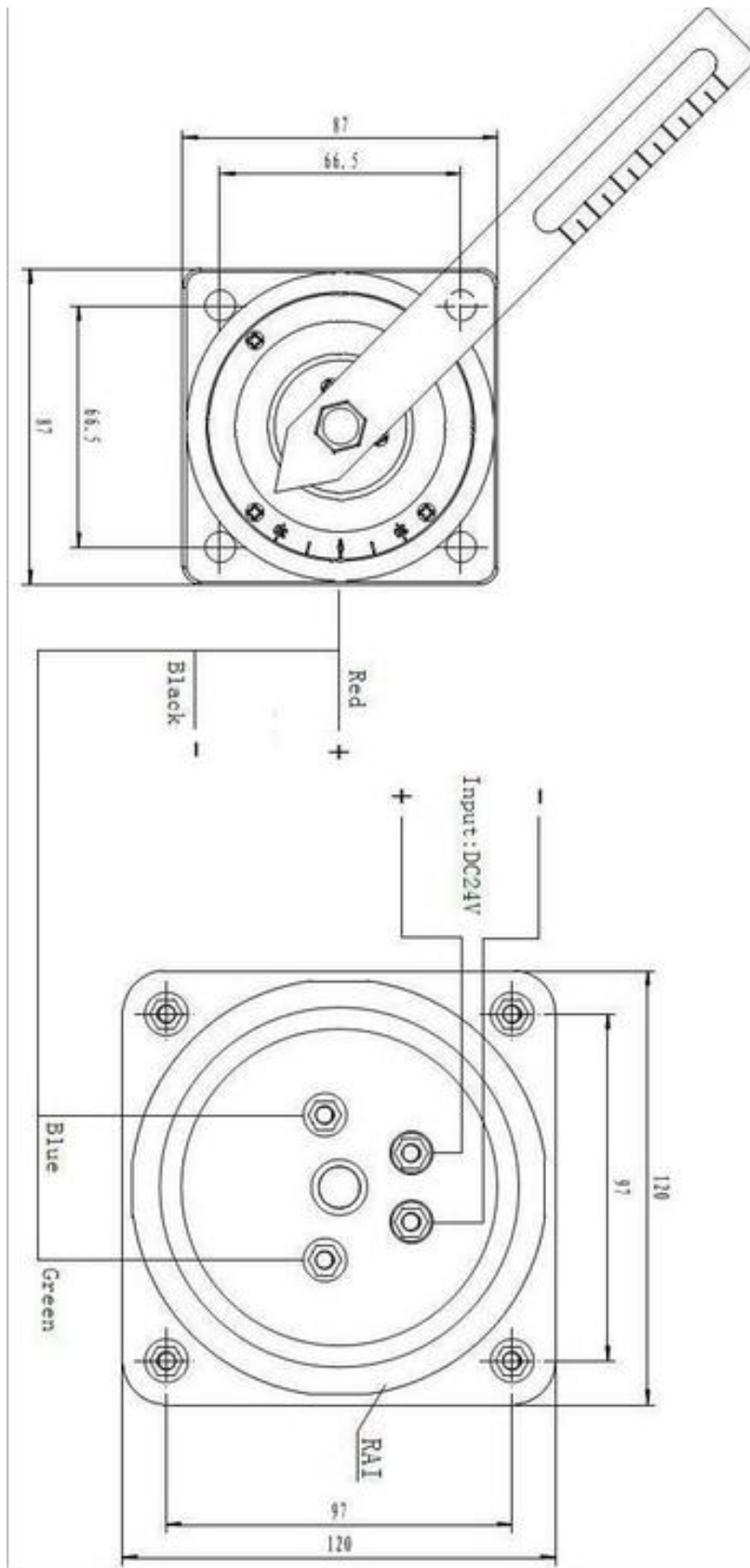
Items	symptoms	causes	solutions
1	Indicator: no display, backlight inoperative	Check the power cable connection	Connect the power cable well and correct
2	Backlight on but indicator no display	check whether there is $\pm 10V$ output	If yes, indicator broken; if not, transmitter broken
3	Too big or too small angle between left and right		Adjust the tie rod
4	0° not correct	Check 0° of transmitter	Correctly adjust the 0° of rudder blade and transmitter
5	Degree of left and right indication not correct, e.g., left 25° , right 30°	Check indicator and transmitter	Make sure the transmitter output $0V$ at 0° (if not, should there is move between transmitter and rod; if yes, the transmitter is out of order), $5V$ at $\pm 45^\circ$.

V. Installation Dimension



Linhai Yida Electronics Co., Ltd

FD-7A Installation



Linhai Yida Electronics Co., Ltd

FD-7B Installation

