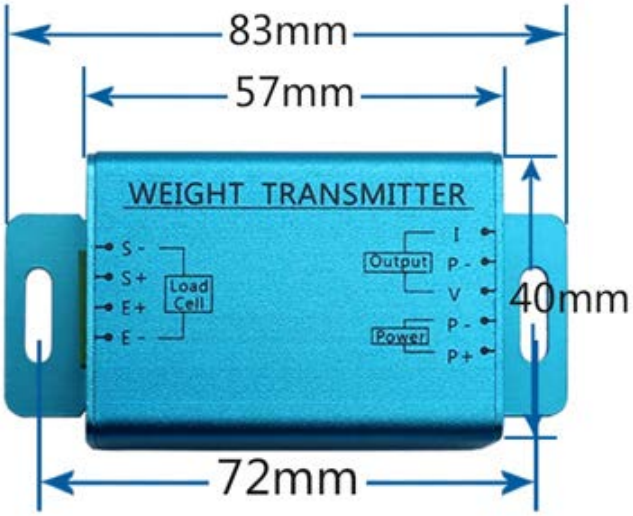
Load Cell Transmitter User Manual

Load cell transmitter ATO-LCTR-OA is made of aluminum alloy, output standard signal 0-5V/ 0-10V/ 4-20mA/ 0-20mA, has linear compensation, humidity compensation, external zero debugging, external span debugging, input overload protection and output short circuit protection functions.

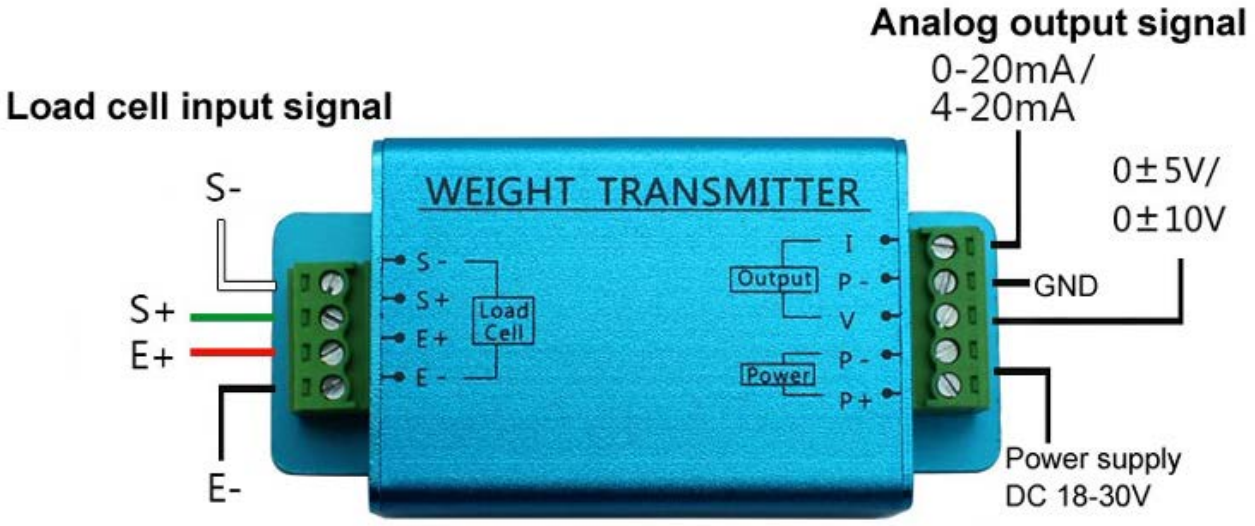
I. Specification:

Model	ATO-LCTR-DY510
Accuracy	±0.05%FS
Input signal	0-20mV
Excitation voltage for load cell	DC 5V
Output signal (DC) *	0-±5V/0-±10V/4-20mA/0-20mA
Power supply	DC 18-30V
Sampling frequency	≥100KHZ

II. Dimensional drawing:



III. Wiring diagram:



IV. Calibration example for output current signal

It is known that the object weight is 100kg, the load cell capacity is 500kg, and the output current signal is 4-20mA.

Operation steps:

→ No-load, debug zero to 0.3 mA

→ Load, debug span to 3.5 mA (100kg / 500kg * 16mA +0.3mA)

→ Up-load, debug zero to 4.00mA

1. After the load cell is installed, debug zero to 0.3mA in no-load state, measure I and P- current values with the multimeter current (DC), and debug Zero to 0.30mA.
2. After loading a 100kg object and keep it stabe, debug Span to 3.2mA, measure l and P- current values with a multimeter, and debug Span to 3.2mA.
3. After removing the object, I and P- current values should be 0. 30mA, and then debug Zero to 4. 00mA.
4. 4 Loading the 100kg object again and keep it stable, l and P- current values should be 7.2mA.

Note: *If the output current value of the first debugging is not 7.2mA, follow the above steps to restart the calibration.*

Calculation formula:

4-20mA	Span current = object weight / load cell capacity * net current output + zero current
Net current output: 16mA	7.2mA = 100kg / 500kg * 16mA + 4mA
0-20mA	Span current = object weight / load cell capacity * net current output + zero current
Net current output: 20mA	4.0mA = 100kg / 500kg * 20mA + 0mA
4-12-20mA	Span current = object weight / load cell capacity * net current output + zero current
Net current output: 8mA	13.6mA = 100kg / 500kg * 8mA + 12mA

Note: *The load cell transmitter does not output a negative current value. When the load cell is used for tension and compression (positive and negative torque), load cell transmitter should be calibrated for third mode, a net current output of 8mA and a current output signal of 4-12-20mA.*

V. Calibration example for output voltage signal

It is known that the object weight is 200kg, the load cell capacity is 1000kg, and the output voltage signal is 0±10V.

Operation steps:

→ No-load, debug zero to 0V

→ Load, debug span to 2.0V

1. After the load cell is installed, use tare to subtract tare in no-load state. Debug zero to 0V, measure I and P- voltage values with the multimeter voltage (DC), and debug Zero to 0V.
2. After loading a 200kg object and keep it stabe, debug Span to 2.0V, measure the l and P- voltage values with a multimeter, and debug Span to 2.0V.

Calculation formula:

0±10V	Span voltage = object weight / load cell capacity * 10V
	2.0V = 200kg / 1000kg * 10V
0 ±5V	Span voltage = object weight / load cell capacity * 5V
	1.0V = 200kg / 1000kg * 5V