



# MLC 310

## COMPACT SYSTEM

### MAGNETIC LINEAR SCALES



- CONTACTLESS AND WEAR-FREE SYSTEM
- HIGH TOLERANCE TO SHOCK AND VIBRATION
- MEASURING LENGTHS OF UP TO 20 METERS
- RESISTANT TO DIRT, HUMIDITY AND DUST
- REQUIRES NO CLEANING OR MAINTENANCE
- ROBUST SHIELDED METAL ENCLOSURE
- PROTECTION CLASS IP67
- COMPACT DESIGN

## OPERATIONAL

## MANUAL

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## 1. WARNINGS

1. Connections must be completed by only authorized personnel.
2. Consider the warnings when completing the connections and using the scale.
3. Pay attention about the sensors power supply. (For TTL sensor max. 5V, for Push-Pull sensor max. 30V). Don't energize the scale before all connections completed.
4. Distance between sensor and control unit must be short as possible.
5. Be away the sensor cable from high power cables, contactor, engine, or inductive and capacitive noise sources.
6. The screen cable must be connected to the earth line.
7. The magnetic tape must be away from magnetic areas.
8. Don't make any connection when the scale energized.
9. Please call the service for any problem about the scale.





### 3. TECHNICAL SPECIFICATIONS

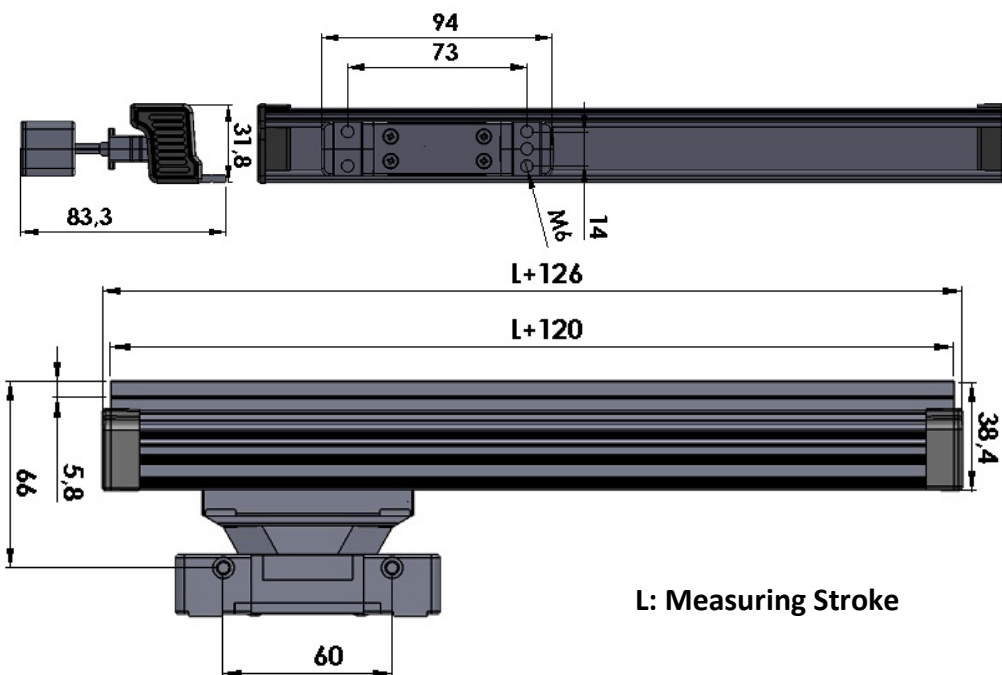
#### TECHNICAL

Operating Temperature	- 25 to 85 °C
Storage Temperature	- 40 to 100 °C
Protection Class	IP67
Body	Aluminum
Magnetic Tape	B5 or B2
Tape Reading Distance	1,5 mm
Travel Velocity	3 m/s max.
Connection	D-Sub 9 Pin, 5 or 8 x 0,14 mm <sup>2</sup> screen cable
Accuracy	± 10 µm max.
Repeatability	± 1 pulse

#### ELECTRICAL

Power Supply	5 Vdc, +10 Vdc...+30Vdc
Current	50 mA Nominal
Output	TTL, Push Pull Line Driver
Output Signals	A, /A, B, /B, Z, /Z
Output Current	100 mA max. (Every Channel)

#### MECHANICAL DIMENSIONS



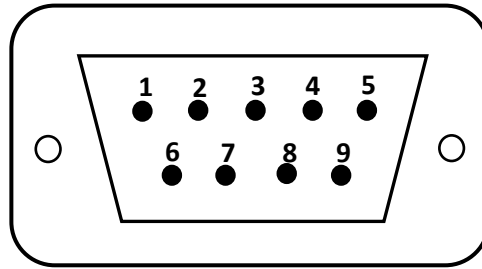
#### Measurement Strokes \*

100	120	150	170
200	220	250	270
300	320	350	370
400	420	450	470
500	520	550	570
600	650	700	750
800	850	900	950
1000	1100	1200	1300
1400	1500	1600	1700
1800	2000	3000	4000

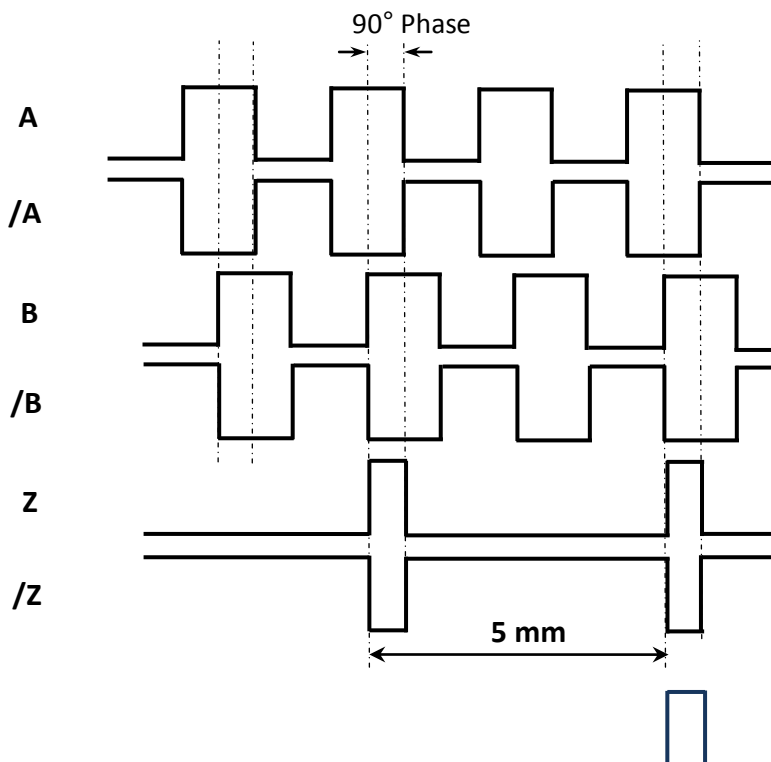
\* Possible between 100 to 20.000 mm

## 4. CONNECTIONS

### 4.1. Pin Connections



Pin Number	Cable Color	Signal
1	Yellow	A
2	White	/B
3	Red	POWER SUPPLY
4	Black	0 V
5	Blue	/A
6	Green	B
7	Grey	/Z
8	Pink	Z
9	Shield	GROUND

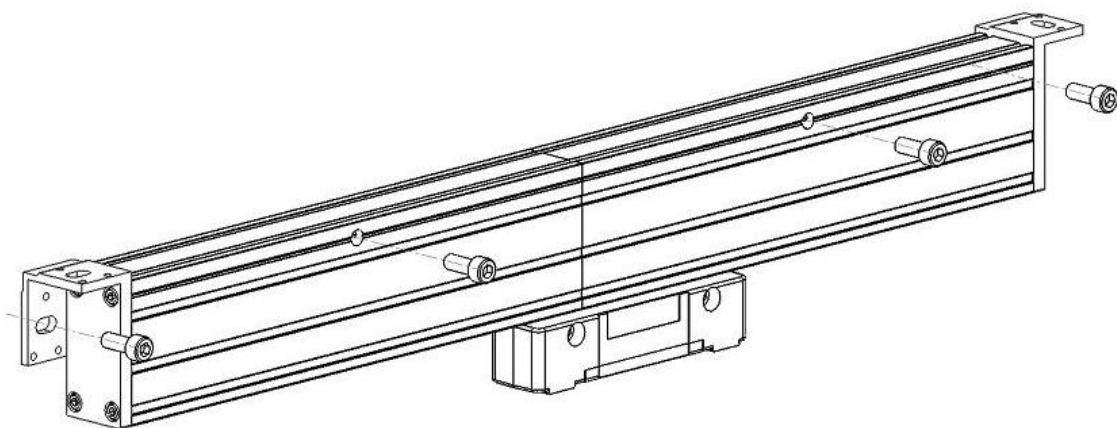
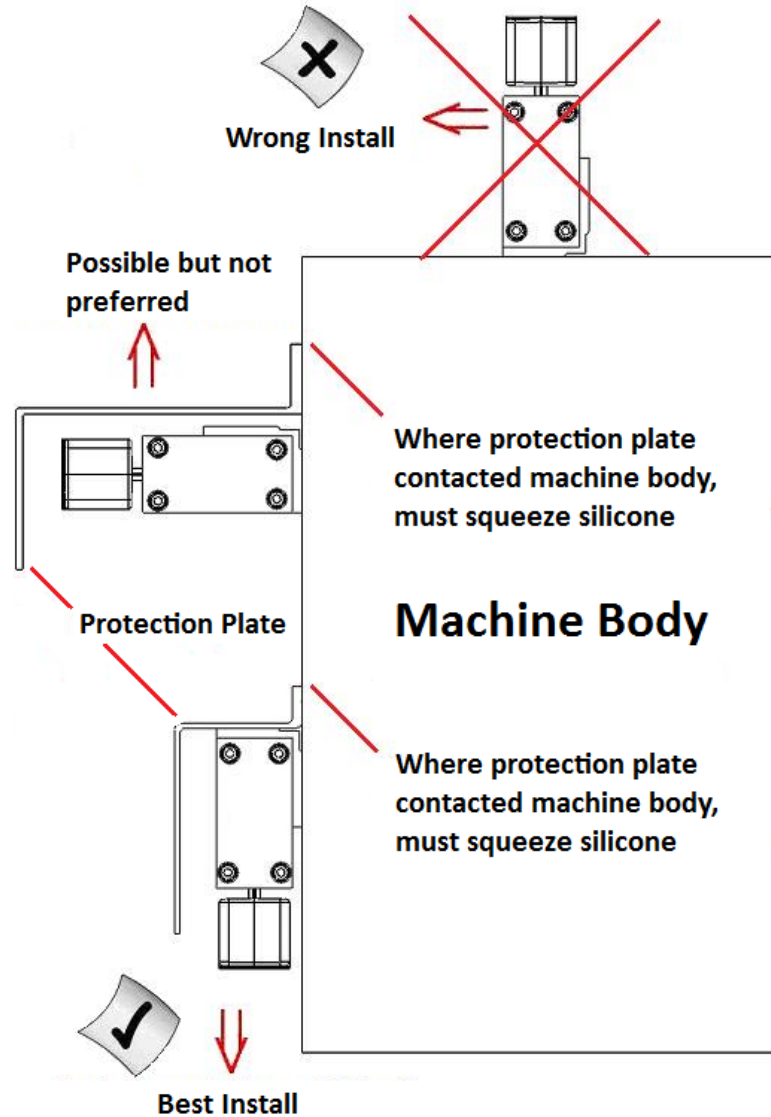


**Standard "Z" Signal**  
Every 5 mm, Z Pulse

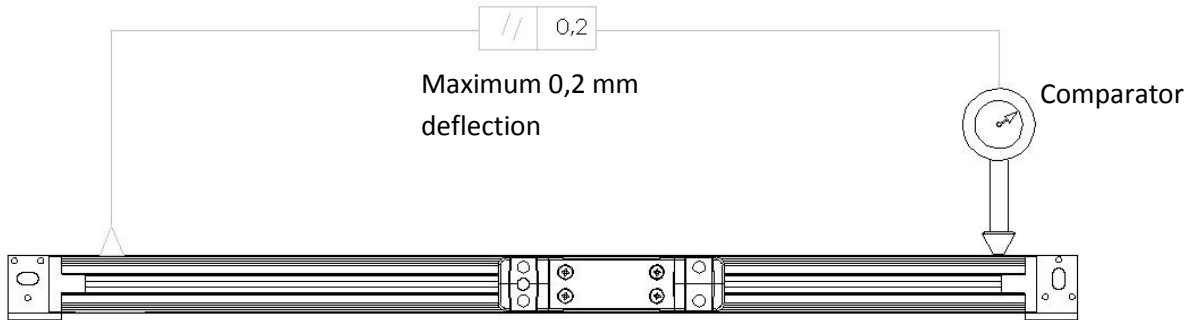
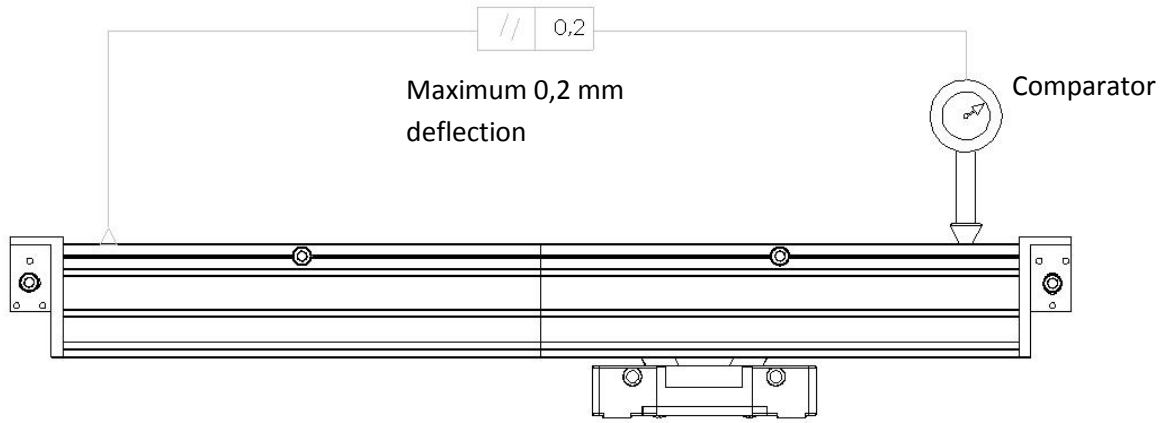
**Optional "Z" Signal**  
One "Z" Reference Signal

## 4.2. Installing

The proper installation of MLC 310 is very important issue in terms of the system work properly. The proper installation is shown down. Up surface of the sensor must be down for negative factors. Protection plate must be used. Reader sensor and profile must be parallel for all the stroke. Comparator must be used when installing the scale.

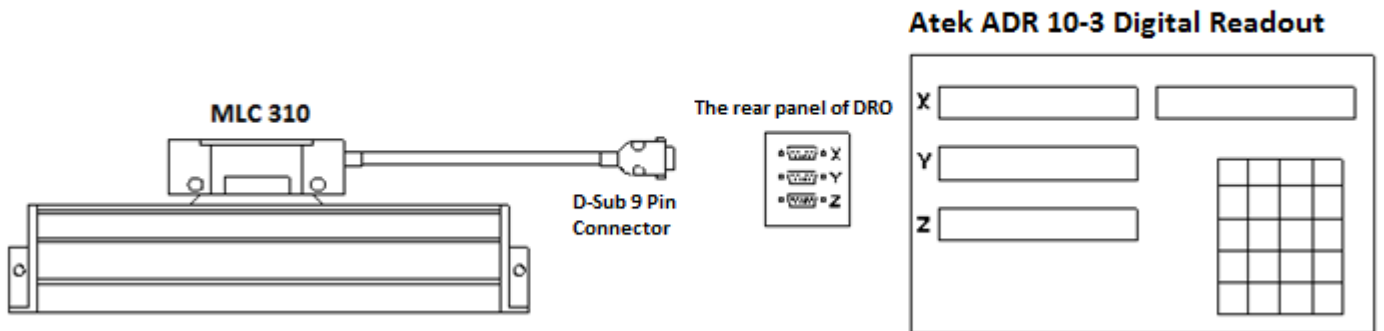


Fixing the scale profile with M4 Screw

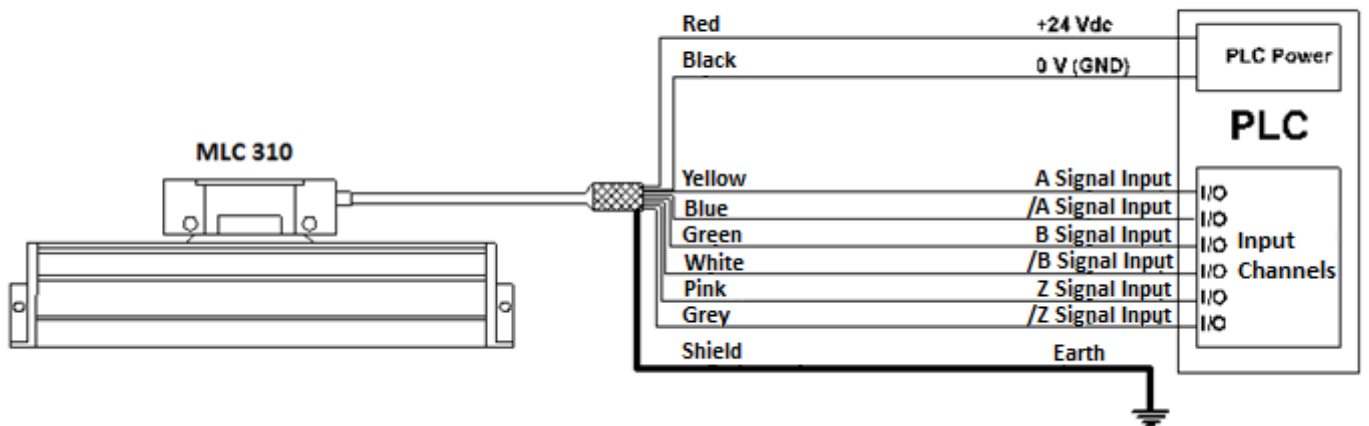


**Warning:** Take away the comparators magnetic surface from scale profile when installing.

## Example DRO Application



## Example PLC Application





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