



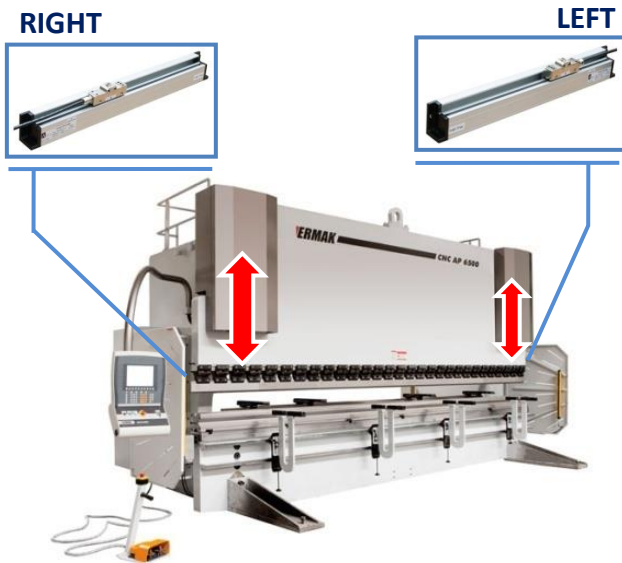
- Self-bearing integrated ball system
- Magnetic measurement
- Contactless / non-friction system
- High tolerance to vibration and shocks
- Easy mounting with wide mounting tolerances
- Stroke up to 4 meters
- Resistant to dust, oil and moisture
- Robust aluminum body
- Excellent Stability
- IP67 Protection Class

The MLC 410 system measures without contact and the incremental encoder gives the output signal as a pulse.

The MLC 410 series is equipped with 4 roller bearings against counter vibrations, specially designed especially for press brakes. Due to excellent bearing, it is possible to prevent any mistakes that may occur during vibration measurement.

It is used to control right and left hydraulic cylinders to provide synchronization in press brakes.

It can also be used for applications with vibrations other than press brakes.



### Technical Specifications

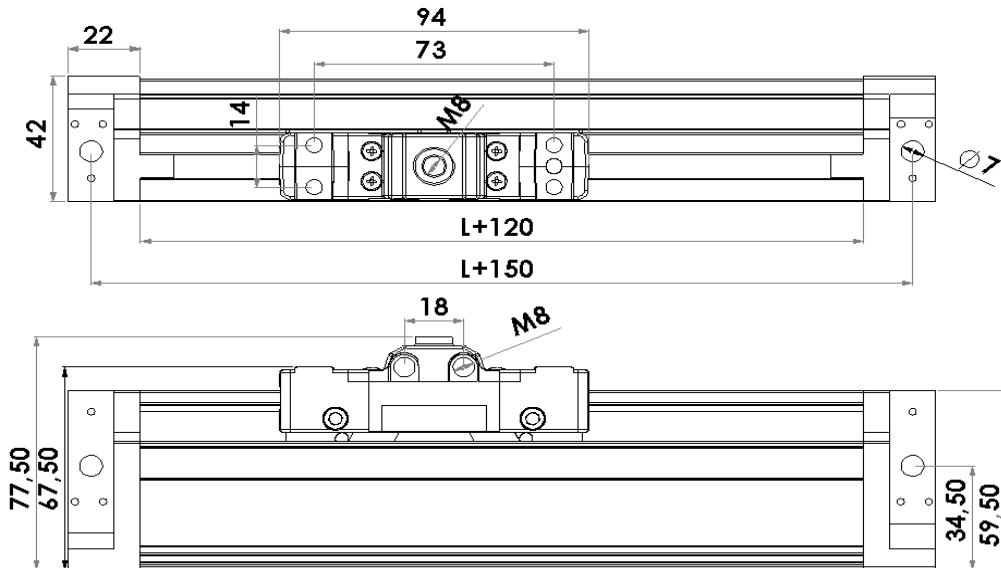
|                              |   |
|------------------------------|---|
| <b>Resolution</b>            | 5µm, 10µm, 25µm, 50 µm, 62.5µm, 100µm (Or on request)               |
| <b>Measuring Principle</b>   | Magnetic  |
| <b>Output Type</b>           | Push-Pull or TTL RS422 Line Driver                                  |
| <b>Output Signals</b>        | A, /A, B, /B, Z, /Z   |
| <b>Input Current</b>         | 40 mA/per channel max.  |
| <b>Output Current</b>        | 40 mA/per channel max.  |
| <b>Power Supply</b>          | PPL:10..30 VDC or TTL:5 VDC   |
| <b>Body Material</b>         | Sensor: Nickel Plated Aluminum<br>Scale Profile: Anodized Aluminum  |
| <b>Electrical Connection</b> | D-Sub 9 Pin socket,<br>5 or 8 x 0,14 mm <sup>2</sup> shielded cable |
| <b>Magnetic Tape</b>         | B5  |
| <b>Operating Speed</b>       | 3 m/s   |
| <b>Repeatability</b>         | ± 1 pulse   |
| <b>Operating Temperature</b> | -25 to +85°   |
| <b>Protection Class</b>      | IP67  |
| <b>Compatible Systems</b>    | ESA, DELEM, CYBELEC   |

### Standard Stroke Lengths (mm)

|      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|
| 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 |

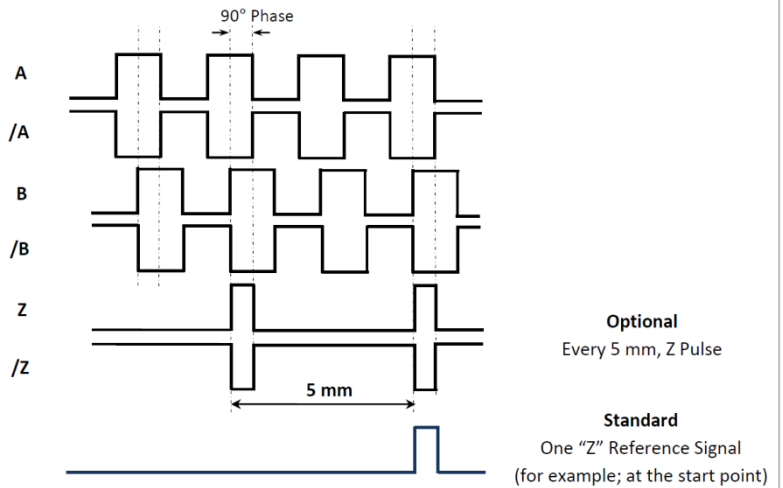
Please inquire us for the other strokes.

## Mechanical Dimensions



## Electrical Connections

| SIGNAL | CABLE COLOR | D-SUB 9 PIN / SOCKET PIN NO |
|--------|-------------|-----------------------------|
| A      | Yellow      | 1                           |
| /B     | White       | 2                           |
| +V     | Red         | 3                           |
| 0V     | Black       | 4                           |
| /A     | Blue        | 5                           |
| B      | Green       | 6                           |
| /Z     | Grey        | 7                           |
| Z      | Pink        | 8                           |
| -      | Shield      | 9                           |



## Order Details

### Magnetic Tape

B5

### Power Supply and Output

TTL : 5VDC Supply Voltage,  
5 VDC TTL RS422 Line Driver Signal Output  
PP : 10...30 VDC Supply Voltage,  
10...30 VDC Push-Pull Signal Output  
HTL : 10...30 VDC Supply Voltage,  
5 VDC TTL RS422 Line Driver Signal Output  
HPL : 5...30 VDC Supply Voltage,  
5...30 VDC Push-Pull Signal Output

### Cable Length

3M : 3 meters  
3.5M : 3,5 meters  
4M : 4 meters  
5M : 5 meters  
6M : 6 meters  
7M : 7 meters  
8M : 8 meters  
9M : 9 meters  
10M : 10 meters  
15M : 15 meters  
\* Please ask for other options

### Measuring Stroke

See standard stroke lengths table, contact for other stroke lengths.

|                           |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |   |   |
|---------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|---|---|
| MLC410                    | -   | X | X | - | X | X | - | X | X | X | - | X | - | X | X | - | X | X | X | mm | - | X |
| <b>Model</b>              |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |   |   |
| <b>Resolution</b>         | 05 : 5µm   10 : 10µm<br>25 : 25µm   50 : 50µm<br>62 : 62,5µm   100 : 100µm  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |   |   |
| <b>Signal Output Type</b> | 2 : A, B<br>3 : A, B, Z<br>4 : A, /A, B, /B<br>6 : A, /A, B, /B, Z, /Z<br><br>Standard: Single Z reference signal<br>Optional: Z Signal at every 5 mm |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |   |   |
| <b>Sensor Type</b>        | C : PUR Cable<br>S : Spiral   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |   |   |
| <b>LEFT / RIGHT</b>       | L : Left<br>R : Right   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |   |   |

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