

MJ

MJ100/110

High response speed interpolator unit for position control

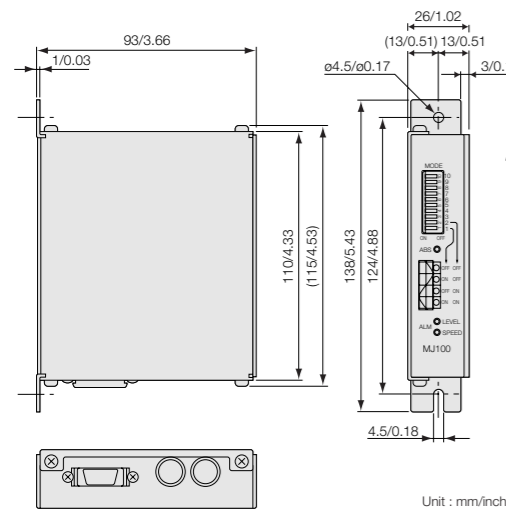


- Capable of 40 to 1000 divisions
- Produces AB quadrature signals with a resolution from 2 μm to 125 μm, when used in combination with the optionally available Digiruler® PL25 head unit and the SL110/130 scale unit (scale signal wavelength: 5 mm), or with the PL60 and the SL331 scale unit (scale signal wavelength: 2 mm).
- MJ100: Supply voltage 5 V input, Line driver (EIA-422 compliance) output
- MJ110: Supply voltage 12 to 30 V input, Open collector (I_{OL}=50 mA) output
- MJ100 also generates U/ V/ W phase output with a period of reproduced Digiruler® signal (5 mm with PL25; 2 mm with PL60)

Example for connection

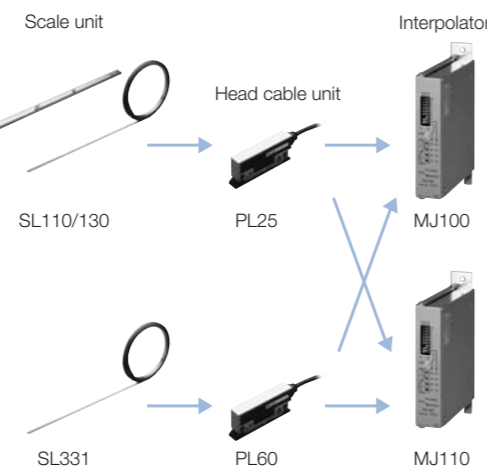
| Scale | Head | Cable | Interpolator |
|-------|------|-------------------------|--------------|
| SL331 | PL60 | CE08 CK-T12/13/14/15/16 | MJ100/110 |

Dimensions

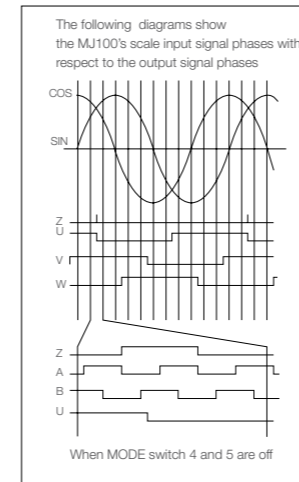


Unit : mm/inch

System Configuration



Phase Relation between MJ100 Input Signals, U/V/W Phases and AB Phases



Specifications

| Model | MJ100 | MJ110 |
|----------------------------|--|--|
| Power supply | 5 V (4.5 V to 6 V) | 12 V to 30 V (11 V to 31 V) |
| Power consumption | 4 W | 3 W |
| Output interface | Line driver (EIA-422 compliance) | Open collector (I _{OL} = 50 mA max.) |
| Outputs | AB quadrature, Z phase, U/V/W phases, alarms | AB quadrature, Z phase, alarms |
| Number of divisions | 1000,960,800,512,500,480,400,256,240,200,128,120,100,80,64,40 and 1/2 of each of these (which does not satisfy the synchronized reference point specifications.) | |
| Maximum response frequency | 1000 divisions | 600 KHz (180 m/min when connected to PL25; 72 m/min when connected to PL60) *1 |
| | 500 divisions | 1.5 KHz (450 m/min when connected to PL25; 180 m/min when connected to PL60) *1 |
| | 200 divisions | 4.0 KHz (1200 m/min when connected to PL25; 480 m/min when connected to PL60) *1 |
| | 120 divisions | 7.4 KHz (2220 m/min when connected to PL25; 888 m/min when connected to PL60) *1 |
| Minimum phase difference | 100 ns | 1 μs |
| Alarms *2 | Speed alarm (minimum phase difference time or maximum response frequency); Level alarm (0.4 V _{p-p} or less); Minimum alarm time: approximately 400 ms | |
| System startup time | Within 0.5 seconds after the power comes on line | |
| External dimensions | 138 x 93 x 26 (mm) / 5.43" x 3.66" x 1.02" including protrusions | |
| Compatible head unit | PL25 or PL60 | |
| Operating temperature | 0 °C to +45 °C / 32 °F to 113 °F | |
| Storage temperature | -20 °C to +60 °C / -4 °F to 140 °F | |
| Mass | 350g / 0.77lbs | |
| Supplied accessories | Manual, output connector, connector cap, mounting screws | |
| Options | SET-P16-1 (for external reference point) Scale extension cable, external reference point extension cable Output connector with cable | |

*1: These values for a minimum phase difference of 1 μs may vary depending on the output cable length.

*2: The alarm function may not operate when an abnormal offset is generated due to a broken wire, etc.

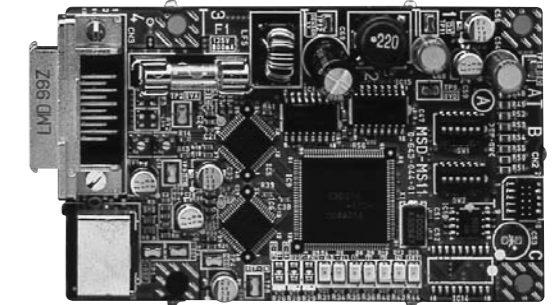
*Contact us directly if you have special requirements for the specifications.

MJ

MJ620

Compact one-axis module with analog input port

- Divides analog input signal into 32 to 800 divisions.
- Produces AB quadrature signal output from the differential line driver when combined with SL700 series scale and PL101 series head cable (both sold separately).

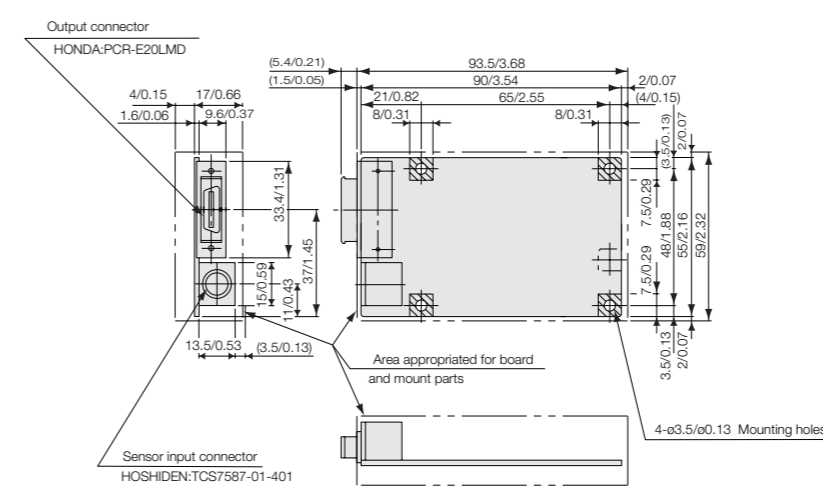


Example for connection

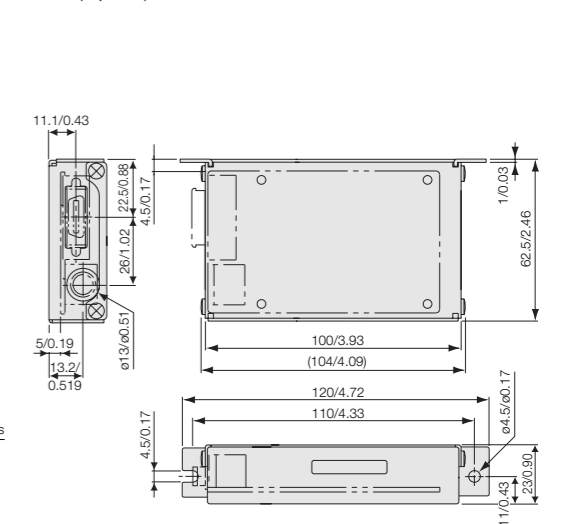
| Scale | Head | Cable | Interpolator |
|-------|-------|-------------------------|--------------|
| SL700 | PL101 | CE08 CK-T12/13/14/15/16 | MJ620 |

Dimensions

MJ620



MZ5(Optional)



Unit : mm/inch

Specifications

| Model | MJ620 |
|-------------------------|--|
| Power supply voltage | 5 V (4.5 to 6 V) |
| Power consumption | 2.2 W (with PL101) |
| Output interface | Line driver (EIA-422 compliance) |
| Output | AB quadrature, Z, Alarm |
| Number of division | 800,400,160,80,40,32 (Correspond to resolution 1,2,5,10,20,25 μm) And 1/2 of this (But concurrent reference point not satisfied) |
| Max. response speed | 6.4 m/s (with phase difference of 100 ns and resolution of 1 μm) |
| | 16 m/s (with phase difference of 100 ns and resolution of 2 μm) |
| | 36.8 m/s (with phase difference of 100 ns and resolution of 5 μm) |
| | 56 m/s (with phase difference of 100 ns and resolution of 10 μm) |
| Min. phase difference | 100 ns |
| Input level | SIN, COS signal 0.6 V _{p-p} to 1.2 V _{p-p} at 120 Ω load Reference signal 0.2 V to 1.5 V at 120 Ω load |
| Alarm | Speed alarm (min. phase difference time or max. response frequency), Level alarm (0.6 V _{p-p} or less), Min. alarm time about 400 ms NOTE: Alarm may not work due to abnormal offset occurred by breakage etc. |
| System starting up time | 0.5s or less after powering up |
| Operating temperature | 0 °C to +45 °C / 32 °F to 114 °F |
| Storage temperature | -20 °C to +60 °C / -4 °F to 140 °F |
| Mass | 60 g / 2.12 oz |

Options

MZ2: Output connector

MZ5: Metal case for MJ620

*The MJ620 Interpolator meets the "applied standards" stated in the specifications table when fitted with the optional MZ5 metal case (see below). Make sure that the MJ620 is used with the MZ5 or like case with the same specifications as MZ5.