Interpolator for DIGIRULER®

MJ100
MJ110

High response speed interpolator unit for position control

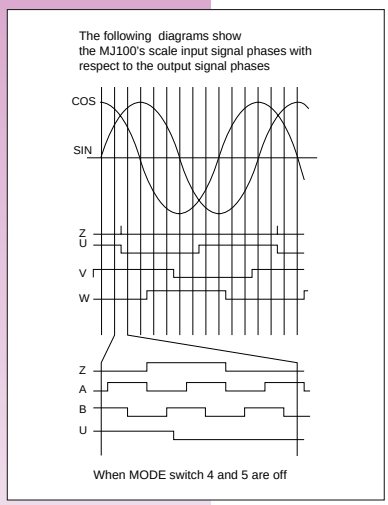
- Capable of 40 to 1000 divisions
- Produces quadrature A/B signals with a resolution from 2 µm to 125 µm, when used in combination with the optionally available Digiruler PL25 head unit and the SL110/130 scale unit (scale signal wavelength: 5 mm), or with the PL60 and the SL331 scale unit (scale signal wavelength: 2 mm).
- MJ100: Supply voltage 5 V input Line driver (EIA-422) 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)

Specifications

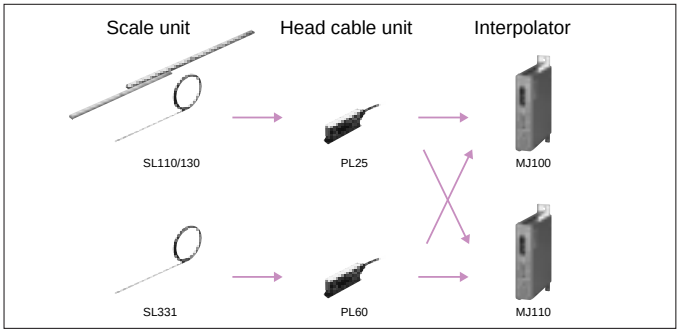
Model		MJ100	MJ110
Power supply		5 V (4.5 V to 6 V)	12 V to 30 V (11 V to 31 V)
Power consumption		4 W	3 W
Output interface		Line driver (EIA-422)	Open collector (I_{OL} = 50 mA max.)
Outputs		A/ B phases, Z phase, U/V/W phases, alarms	A/ B phases, Z alarms
Number of divisions		1000,960,800,512,500,480,400,256,240,200,128,120,100,80,64,40 and 1/2 of each of these (which does not satisfy the synchronized reference point specifications.)	
Maximum response frequency	1000 divisions	6 KHz (1800 m/min when connected to PL25; 720 m/min when connected to PL60)	600 KHz (180 m/min when connected to PL25; 72 m/min when connected to PL60) *1
	500 divisions	15 KHz (4500 m/min when connected to PL25; 1800 m/min when connected to PL60)	1.5 KHz (450 m/min when connected to PL25; 180 m/min when connected to PL60) *1
	200 divisions	42 KHz (12600 m/min when connected to PL25; 5000 m/min when connected to PL60)	4.0 KHz (1200 m/min when connected to PL25; 480 m/min when connected to PL60) *1
	120 divisions	70 KHz (21000 m/min when connected to PL25; 8400 m/min when connected to PL60)	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 Vp-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 1,024" including protrusions	
Compatible head unit		PL25 or PL60	
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		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 valuse 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.

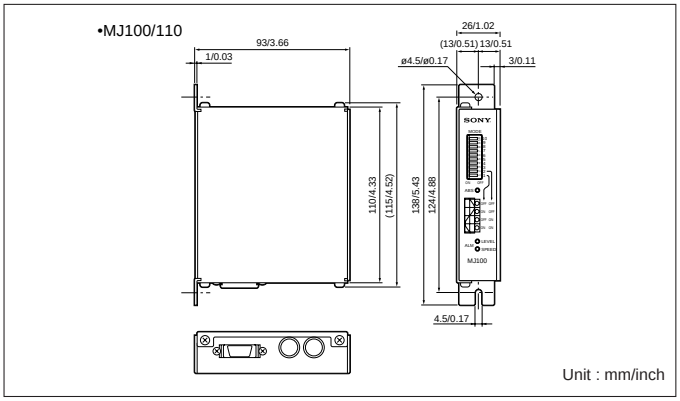
Phase Relation between MJ100 Input Signals, U/V/W Phases and A/B Phases



System Configuration



Dimensions



Detectors & Interpolators