

CP-1250, Interpolator



Description:

The CP-1250 is a convenient and cost-effective way to increase the resolution of optical shaft encoders by orders of magnitude. The interpolator yields a conventional A/B quadrature signal, multiplying the base encoder linecount by eight selectable multiplication factors. A recirculating up/down counter is recommended as receiving device (e.g. HP™ HCTL 2000, 2016, 2020; LSI™ 7166). An internal DIP switch allows te setting of the various multiplication factors as well as the frequency rate. "Straight through" connections are provided to monitor the encoder signals on the output as well as feed-ins for encoder generated single ended "Hall" signals, converted to complementary linedriver signals (RS-422 compatible) internal to the interpolator module. The CP-1250 can be factory supplied together with COPI sine/cosine encoders for a complete measuring system. An "error signal" is provided to flag any error condition on the encoder signals.

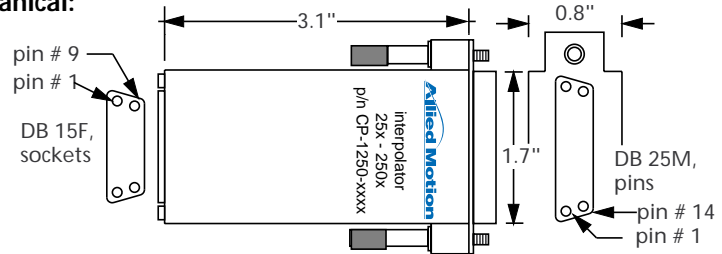
Specifications:

- power in: + 5Vdc @ 250 mA
- power to encoder : max + 5Vdc @ 150 mA max
- input signals: 0.5 Vpp, sinusoidal, complementary, digital index
- output frequency: 2 MHz max.
- output signals: linedrivers (RS422)
- output format: quadrature A/B, index
- user selectable multiplication factors: : 25, 31.25, 50, 62.5, 100, 125, 200, 250.

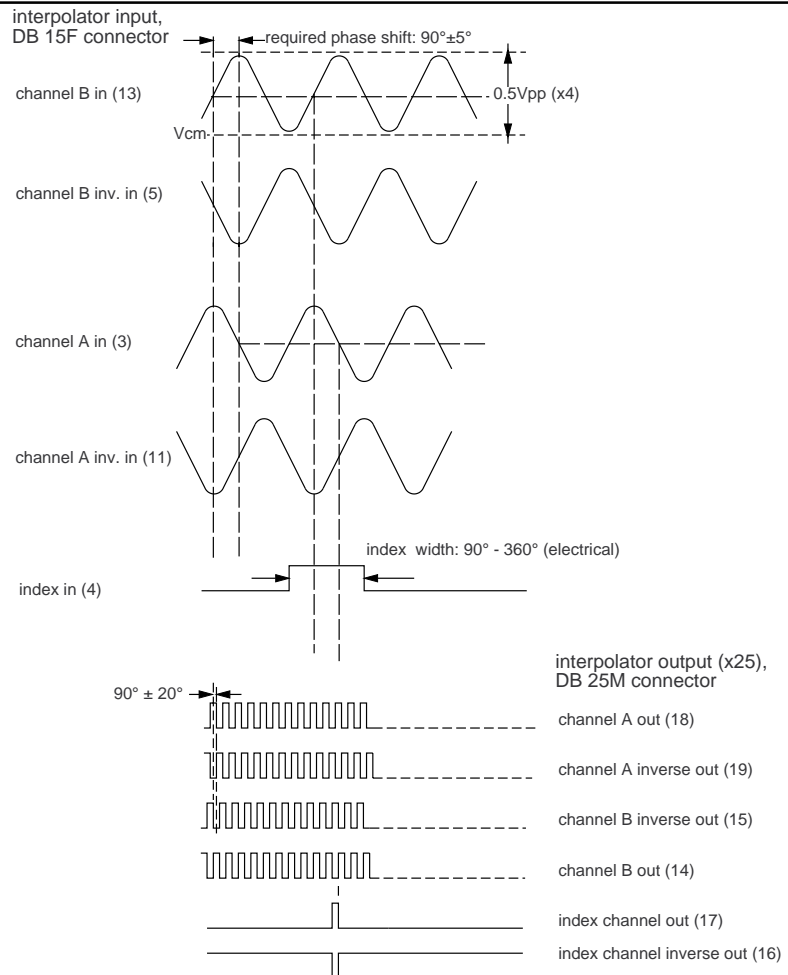
Ordering Information:

CP-1250-(multiplication factor)


Mechanical:





signals inputs from encoder	pin#	signal outputs	pin #
+ 5 Vdc to encoder:	1	"Hall" signal 1 inverse:	1
"Hall" signal 3:	2	"Hall" signal 1:	2
channel A (cos):	3	"Hall" signal 2 inverse:	3
index (digital):	4	"Hall" signal 2:	4
channel B inverse (cos + 180°):	5	"Hall" signal 3 inverse:	5
n/c:	6	"Hall" signal 3:	7
n/c:	7	n/c:	8
n/c:	8	encoder index:	9
ground to encoder:	9	channel B (sine) from encoder:	10
"Hall" signal 2:	10	channel B inverse (sin + 180°) from encoder:	11
channel A inverse (sin + 180°):	11	channel A (cos) from encoder:	12
"Hall" signal 1:	12	channel A inverse (cos + 180°) from encoder:	13
channel B (sine):	13	channel B out:	14
n/c:	14	channel B inverse out:	15
n/c:	15	index channel inverse out:	16
		index channel out:	17
		channel A out:	18
		channel A inverse out:	19
		error signal out:	20
		error signal inverse out:	21
		+ 5Vdc in:	24
		ground:	25
		not connected:	6,8,22 & 23






DIP switch settings, "on" or "1" position shown.:

 gain (default: on)

 glitch filter (default: on)

 interval time (default: 000)

	multiplier bits	0	0	0	0	1	1	1	1
		0	0	1	1	0	0	1	1
		0	1	0	1	0	1	0	1

multiplier: 200 100 50 25 250 125 62.5 31.25

CP-300/500-100	20,000	10,000	5,000	2,500	25,000	12,500	6,250	3,125
200	40,000	20,000	10,000	5,000	50,000	25,000	12,500	6,250
256	51,200	25,600	12,800	6,400	64,000	32,000	16,000	8,000
360	72,000	36,000	18,000	9,000	90,000	45,000	22,500	11,250
500	100,000	50,000	25,000	12,500	125,000	62,500	31,250	15,625
600	120,000	60,000	30,000	15,000	150,000	75,000	37,500	18,750
1,000	200,000	100,000	50,000	25,000	250,000	125,000	62,500	31,250
1,024	204,800	102,400	51,200	25,600	256,000	128,000	64,000	32,000
2,048	409,600	204,800	102,400	51,200	512,000	256,000	128,000	64,000

CP-800/900-1,000	200,000	100,000	50,000	25,000	250,000	125,000	62,500	31,250
1,024	204,800	102,400	51,200	25,600	256,000	128,000	64,000	32,000
1,100	220,000	110,000	55,000	27,500	275,000	137,500	68,750	34,375
1,250	250,000	125,000	62,500	31,250	312,500	156,250	78,125	39,063
1,800	360,000	180,000	90,000	45,000	450,000	225,000	112,500	56,250
2,000	400,000	200,000	100,000	50,000	500,000	250,000	125,000	62,500
2,048	409,600	204,800	102,400	51,200	512,000	256,000	128,000	64,000
3,600	720,000	360,000	180,000	90,000	900,000	450,000	225,000	112,500
4,096	819,200	409,600	204,800	102,400	1,024,000	512,000	256,000	128,000
5,000	1,000,000	500,000	250,000	125,000	1,250,000	625,000	312,500	156,250
5,625	1,125,000	562,500	281,250	140,625	1,406,250	703,125	351,563	175,781

CP-200-200	40,000	20,000	10,000	5,000	50,000	25,000	12,500	6,250
210	42,000	21,000	10,500	5,250	52,500	26,250	13,125	6,563
240	48,000	24,000	12,000	6,000	60,000	30,000	15,000	7,500
254	50,800	25,400	12,700	6,350	63,500	31,750	15,875	7,938
256	51,200	25,600	12,800	6,400	64,000	32,000	16,000	8,000
280	56,000	28,000	14,000	7,000	70,000	35,000	17,500	8,750
288	57,600	28,800	14,400	7,200	72,000	36,000	18,000	9,000
300	60,000	30,000	15,000	7,500	75,000	37,500	18,750	9,375
360	72,000	36,000	18,000	9,000	90,000	45,000	22,500	11,250
384	76,800	38,400	19,200	9,600	96,000	48,000	24,000	12,000
400	80,000	40,000	20,000	10,000	100,000	50,000	25,000	12,500
480	96,000	48,000	24,000	12,000	120,000	60,000	30,000	15,000
500	100,000	50,000	25,000	12,500	125,000	62,500	31,250	15,625
512	102,400	51,200	25,600	12,800	128,000	64,000	32,000	16,000
576	115,200	57,600	28,800	14,400	144,000	72,000	36,000	18,000
1,024	204,800	102,400	51,200	25,600	256,000	128,000	64,000	32,000