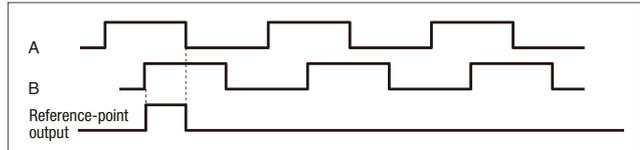
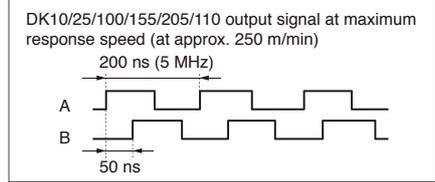
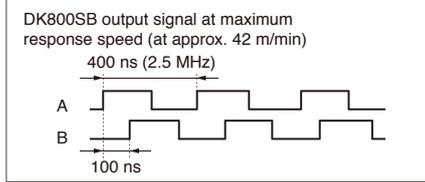
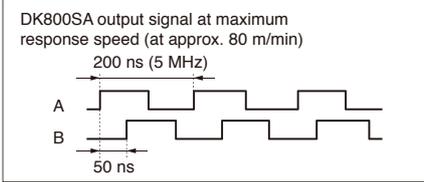


## DK Series measuring unit output signals

The signal output from these measuring units are A/B/Z reference point, voltage differential line driver (compliant with EIA-422) output compliant with EIA-422.



The reference point is synchronized with A and B phases at high impedance. (Note: this may not be worded correctly)



The A/B quadrature output signal by measuring unit is 5 MHz maximum with a minimum phase difference of 50 ns for DK800SA and is 2.5 MHz maximum with a minimum phase difference of 100 ns for DK800SB.

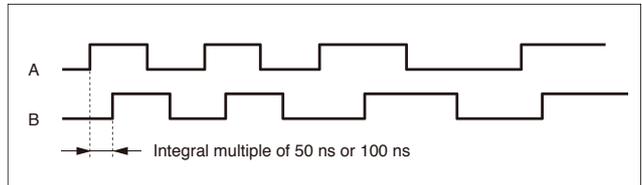
For DK the A/B quadrature output signal by measuring unit is 5 MHz maximum with a minimum phase difference of 50 ns .

The counter or control device capable of processing these signals should be used.

The counter or control device capable of processing these signals should be used.

### Output Signal Phase Difference

Moving length of the measuring unit is detected every 50 ns for the DK800SA/DK and every 100 ns for the DK800SB, and the phase difference proportional to the amount traveled is output.



The amount of phase difference changes in integer multiples of 50 ns or 100 ns.

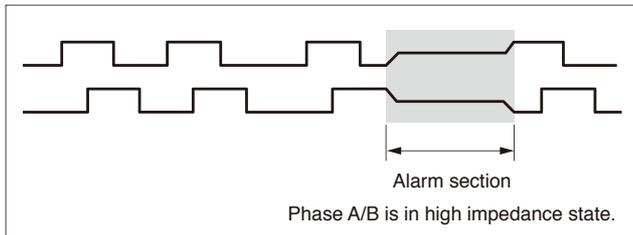
Also, the minimum phase difference for the phase A and B is 50 ns for the DK800SA/DK and 100 ns for the DK800SB.

In the standard specifications, the minimum phase difference is fixed at 50 ns for the DK800SA and 100 ns for the DK800SB, however, the minimum phase differences in the following table below are available as special specifications.

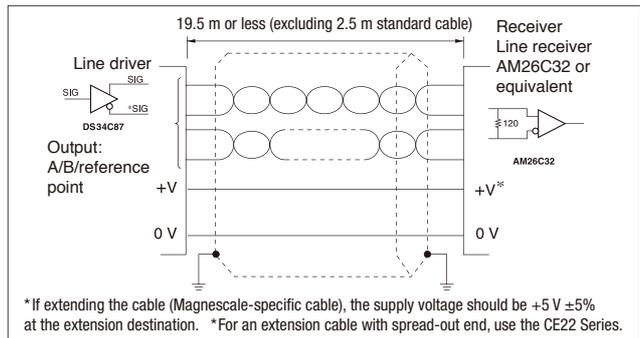
| Phase A/B<br>Minimum phase difference | Phase A single cycle | Counter's permissible frequency | Maximum response speed       |                              | Remarks                  |
|---------------------------------------|----------------------|---------------------------------|------------------------------|------------------------------|--------------------------|
|                                       |                      |                                 | Resolution 0.1 $\mu\text{m}$ | Resolution 0.5 $\mu\text{m}$ |                          |
| 50ns                                  | 200ns                | 5MHz                            | 80m/min                      | 250m/min                     | DK800SA standard product |
| 100ns                                 | 400ns                | 2.5MHz                          | 42m/min                      | 100m/min                     | DK800SB standard product |
| 300ns                                 | 1.2 $\mu\text{s}$    | 833kHz                          | 14m/min                      | 33m/min                      | Special specifications   |
| 500ns                                 | 2 $\mu\text{s}$      | 500kHz                          | 8.4m/min                     | 20m/min                      | Special specifications   |

### Output Signal Alarm

If the response speed is exceeded, the phase A/B output from this measuring unit changes to high impedance state for about 400 ms as an alarm.



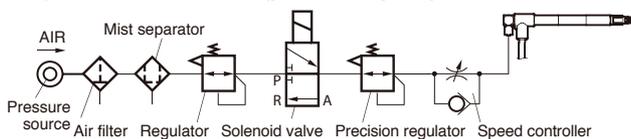
### Receiver



## DK Series operating cautions

- For the pneumatic push type, use of the pneumatic circuit shown in Fig. 1 enables the feeler to be air driven. Pressure regulation is required depending on the usage condition. A precision pressure regulator (e.g., SMC IR2010 or equivalent) should be used.
- For the vacuum suction type, use of the pneumatic circuit shown in Fig. 2 enables the feeler to be air driven.

**Fig. 1 Pneumatic circuit (pneumatic push)**



**Fig. 2 Pneumatic circuit (vacuum suction)**

