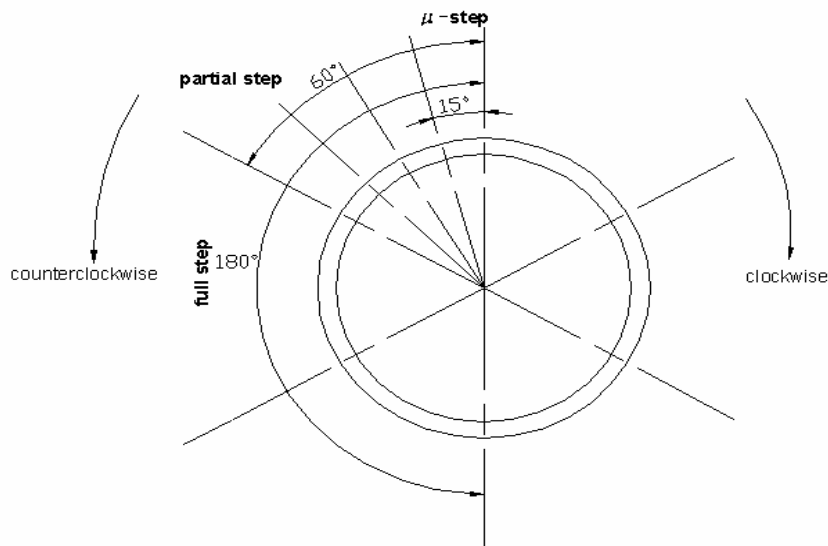


## VID29-XX RESET PULSE

### General Description

#### Introduction

In most of the VID29-XX applications, the angular range of the instrument dial is less than 300°. This allows use of a mechanical stop to define the zero position. Generally the pointer will be reset to the zero position at each power-up of the instrument.



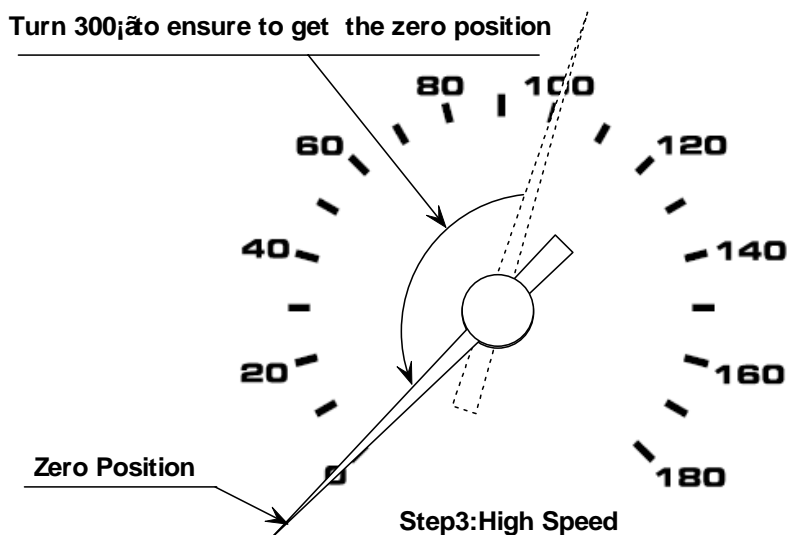
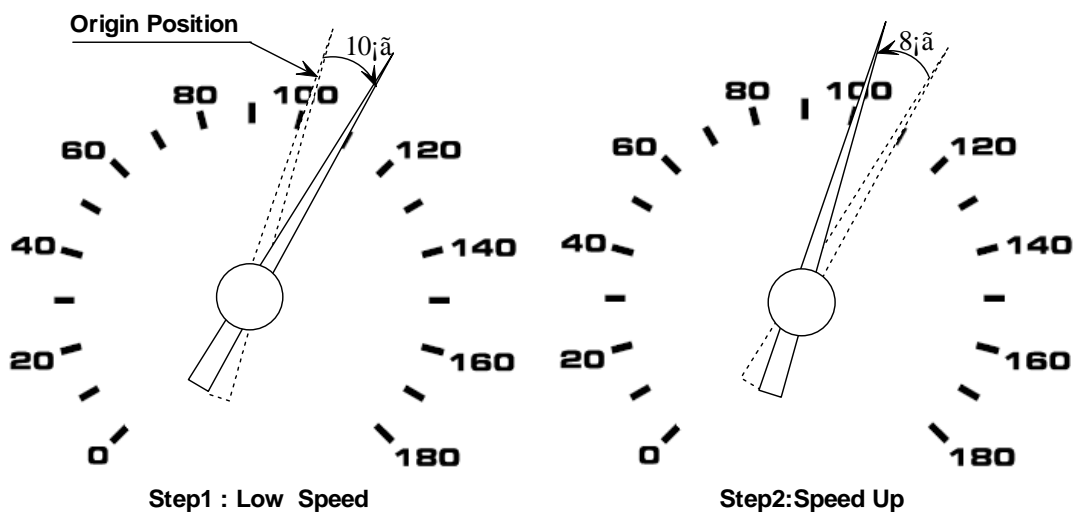
Definition	Rotor rotation	Pointer rotation
1 $\mu$ - step	15°	-0.083°
1 partial step	60°	-0.33°
1 full step	180°	-1°
1 Hz	180° / sec	1° / sec

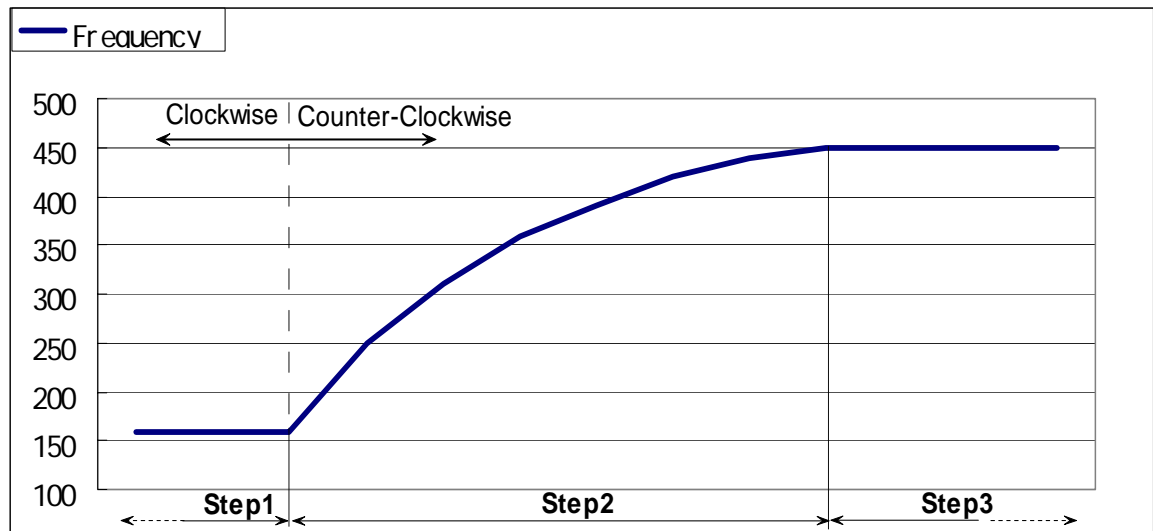
#### Purpose of Reset Pulse Sequence

At power on of instrument the customer bring the pointer at his initial stop position without creating any visible and audible jitter of the pointer.

## Reset Process

- **Step1:** Turn the pointer clockwise at a initial speed ( $F_{ss}$ ), and let it run for  $10^\circ$ .
- **Step2:** Speed up the pointer counter-clockwise to about  $450^\circ/s$  in  $8^\circ$  angular range.
- **Step3:** Keep the high speed ( $450^\circ/s$ ) and let it run for  $300^\circ$  to touch the mechanical stop.





## NOTE:

- The motor as to be driven in  $\mu$ -steps mode (12  $\mu$ -steps per full step)
- The maximum initial rotational frequency (speed) is the start-stop frequency ( $F_{ss}$ )
- $F_{ss}$  depend on the inertia of pointer (see specific calculation formulas)
- For a typical pointer  $F_{ss} < 160$  Hz (160°/sec of pointer)
- The pointer will be accelerate from  $F_{ss}$  (typical 160 Hz) to 450 Hz (450°/sec of pointer) in 8 steps
- Each step correspond at 1 full step of the motor (=180° of rotor = 1° of pointer)

## Acceleration Detail (Step2)

- The motor move 12  $\mu$ -steps on each Speed (the pointer move 1 degree)
- The pointer will rotate 8 degree in the speed-up process, then arrive at 450Hz
- The frequencies needn't be very precise, it allow a small error

Rotor angle	0°	180°	360°	540°	720°	900°	1080°	1260°
Pointer angle	0°	1°	2°	3°	4°	5°	6°	7°
Speed [Hz]	160	250	310	360	390	420	440	450

