

# BATTERYLESS ABSOLUTE ENCODER

## Hybrid Motor



**MinebeaMitsumi** introduces a new lineup of hybrid stepping motors with integrated batteryless absolute encoder. This technology can detect the rotor position in the absence of power which eliminates the need for a backup battery. Customers can also omit home sensors and limit sensors since the actual position is always known.

An absolute encoder is centered on the concept of measuring time with an analog clock. Magnetic sensors track the angles of three gears that represent the hands of a clock. The position of the output shaft is calculated from the value of these three angles.

The unique mechanical structure delivers an ultra-thin, compact design ideal for laboratory and industrial automation applications.

## Features

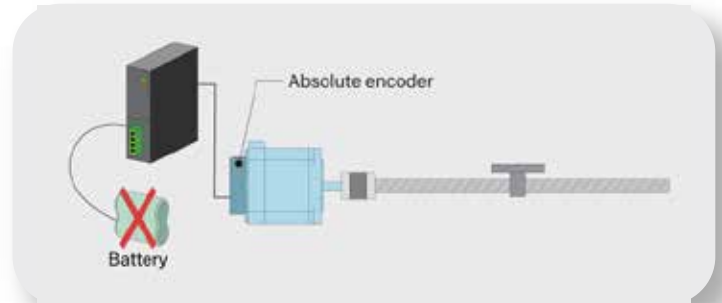
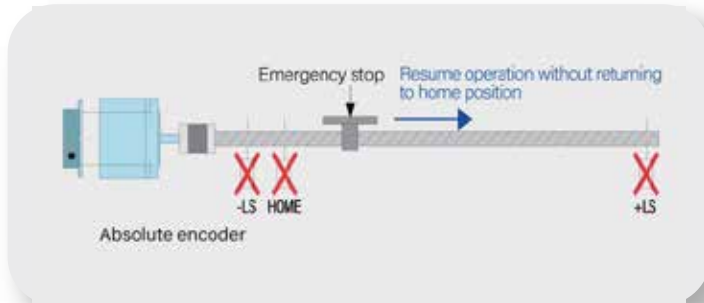
- ◆ Agile stop-and go movement
- ◆ Rapid short-distance positioning
- ◆ High-speed travel over longer distances
- ◆ Short-distance positioning with low vibration and high accuracy

## Applications

- Clinical Analyzers
- Semiconductors Manufacturing Equipment
- Industrial Automation
- Visual Inspection Equipment

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## Specifications

Motor Type	Motor Size (mm)	Step Angle (deg)	Drive Sequence	Rated Current (a/phase)	Winding Resistance (ohms)	Holding Torque (mNm)	Inductance (mH)	Rotor Inertia (g-cm <sup>2</sup> )	Detent Torque (mNm)	Mass (g)	Encoder Resolution (CPR)	Turn
M11PMK043CMB03	28X49	1.8	BI-POLAR	1.5	1.3	100	1.2	8	4.4	170	4,000	200
M11PMK142CMB03	28X57	1.8	BI-POLAR	1.5	1.5	145	1.2	13	5.4	200	4,000	200
M11PMK241CM03	28X68	1.8	BI-POLAR	1.5	1.7	200	1.8	16	8.0	270	4,000	200
M17PMK340CMB03	42X52	1.8	BI-POLAR	2.0	0.9	290	2.0	50	11	320	4,000	1,000
M17PMK440CMB03	42X62	1.8	BI-POLAR	2.0	1.2	510	2.6	75	16.7	420	4,000	1,000
M17PMFA34CMB03	42X74	1.8	BI-POLAR	2.6	1.0	690	1.5	162	30	580	4,000	1,000
M23KMK358CMB03	56x64	1.8	BI-POLAR	1.7	1.9	800	7.8	180	29	660	4,000	1,000
M23KMH049CMB03	56x69	1.8	BI-POLAR	3.0	0.9	1300	3.7	320	54	750	4,000	1,000
M23KMH744CMB03	56x91	1.8	BI-POLAR	3.0	0.7	1800	2.8	490	93	1130	4,000	1,000