

**MinebeaMitsumi Starts Development and Launch of
Stepping Motors with Battery-less Absolute Encoder**
-- Compact Design Motor with an Absolute Encoder Thickness of 10 mm!
A Dedicated Driver will be Additionally Released --

MINEBEA MITSUMI Inc. (MinebeaMitsumi) announces that it has recently begun developing and selling a hybrid stepping motors with an absolute encoder*.

In addition, we are planning to release the ST-Box, a dedicated driver for the same motor 'Closed-loop stepping servo solution', in January 2021.

*Position sensor detects and outputs absolute position. Position data can be saved even when the power is off or there is no power supply.

MinebeaMitsumi, the world's leading supplier of stepping motors (Note 1), has achieved a thin design with a mechanism thickness of 10mm for general optical incremental encoders** for stepping motors. However, with our unique mechanical sensor structure, we have also succeeded in compact design with a thickness of 10mm for absolute encoders that require more complex mechanisms. With this, even if the power is shut off, current position data will be retained within a range of up to 1000 revolutions, making a return operation unnecessary when the power is turned on again.

**Position sensor detects and outputs relative position. It's the most common encoder type, even more prevalent than before, although position is not saved when it is not powered.

Also, it is possible to use a battery-less system, which leads to advantages such as "reducing the time and effort required for spare battery management, maintenance, and replacement," and there is "no need for various regulatory measures when exporting batteries overseas."

In January 2021, we plan to release the ST-Box, which is a dedicated drive circuit.

ST-Box is a driver that pursues simultaneous enhancement of both function and performance, such as multi-functionality equipped with a 7-segment display monitor and Position control, Torque control, Force control and Speed control that achieve efficient operation and step out-less control according to load conditions.

Nine operation modes can be practiced without using PC software or a teaching pendant, such as test operations and parameter settings. Additionally, it is also possible to deal with the three command systems of "I/O control", "pulse stream control", and "RS485 communication control" from the outside. We have also achieved the ease of use of a stepping motor equipped with an absolute encoder with the control method desired by users.

This product is used to drive various transport point and positioning stage drive applications in semiconductor/electronic component manufacturing equipment, medical sample analyzers, commercial printing machines, etc., and is effective for items with many axes and systems that cannot return to origin due to their mechanical interference.

Going forward, MinebeaMitsumi will continue to meet global needs by providing support for a wide range of industrial networks.



Stepping motors with an absolute encoder

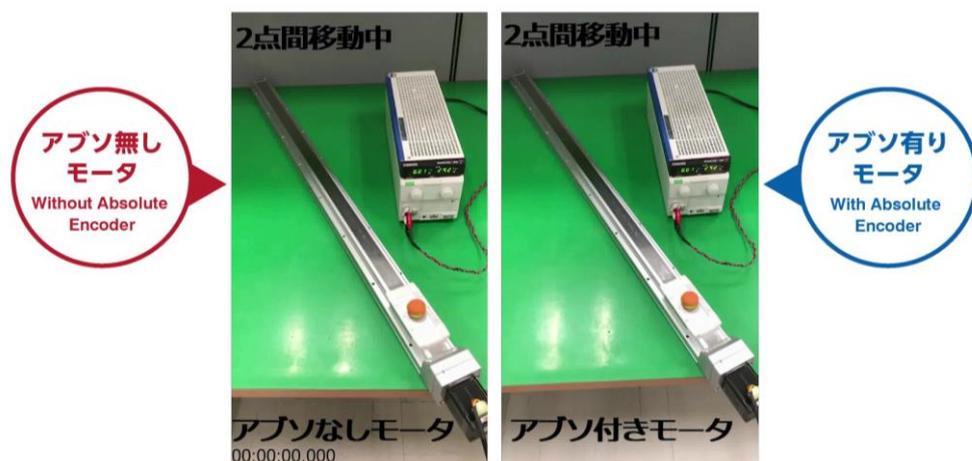
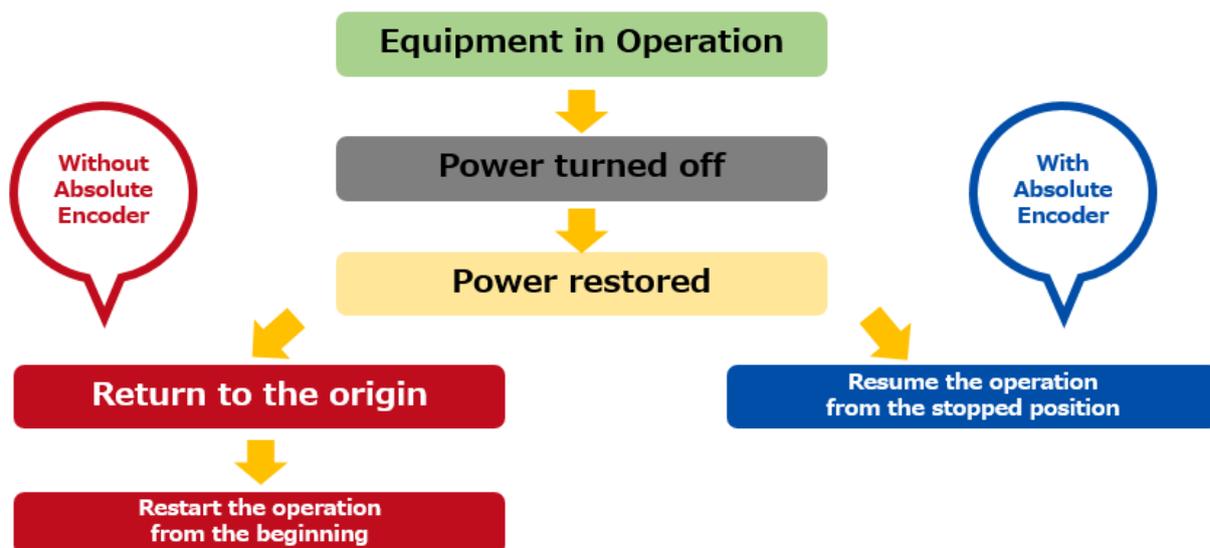


ST-Box

Reference: [Official YouTube channel](#) (link)

Note 1: Fuji Keizai Co., Ltd. Precision Micro Motor Market 2019: Comprehensive Survey 2018, (Annual unit sales basis)

Comparison between “without absolute encoder” and “with absolute encoder”



[Demo movie](#)

Specification

Applicable motor size	□25, 42, 56.4mm ***
Multi-turn detection amount	1000T
Resolution (Absolute block resolution)	14bit (Angle Sensor)
Power Supply Voltage	24V/48V

*** □28mm, □35mm, etc. Lineup will be added.

For more details on [eMinebea](#).

Sales Inquiries:
Stepping Motor Product Sales Management
MinebeaMitsumi Inc.
Phone: +81-(0)3-6758-6768

Media Inquiries:
Corporate Communications and Investor Relations Office
MinebeaMitsumi Inc.
Phone: +81-(0)3-6758-6703 E-mail: koffice@minebeamitsumi.com

###