MITSUBISHI ELECTRIC CORPORATION
PUBLIC RELATIONS DIVISION
7-3, Marunouchi 2-chome, Chiyoda-ku, Tokyo, 100-8310 Japan

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Customer Inquiries
Overseas Marketing Division
Building System Group
Mitsubishi Electric Corporation

bod.inquiry@rk.MitsubishiElectric.co.jp
www.MitsubishiElectric.com/products/building/

Media Inquiries
Public Relations Division

Mitsubishi Electric Corporation

prd.gnews@nk.MitsubishiElectric.co.jp
www.MitsubishiElectric.com/news/

Mitsubishi Electric Launches u series Escalator

Enhanced passenger safety and comfort, significant energy savings and reduced environmental impact

TOKYO, December 7, 2020 – Mitsubishi Electric Corporation (TOKYO: 6503) announced today the immediate commercial launch of its new u series of escalators, which enhance passenger safety and comfort and also achieve significant energy savings compared to previous models. The company is targeting annual sales of 500 units in the ASEAN, Middle Eastern, Latin American and Indian markets.

Mitsubishi u series escalator

Main Features

1) Enhanced passenger safety and comfort

- The “Slow-stop function” slowly decelerates the escalator when an emergency stop is made, and the optional “Speed change operation” enables low-speed operation, both of which reduce the risk of passengers falling, for enhanced safety and comfort.
- A higher curb-like deck board helps to prevent passengers from stepping their feet on this stationary part, thereby avoiding potential accidents.
- An optional built-in ultraviolet light sterilizes the handrail to lower infection risks (not guaranteed to prevent all risks of infection).

2) Energy Savings

- A variable-voltage variable-frequency (VVVF) inverter control optimizes motor efficiency, especially for light loads.
- In the case of few or no passengers, an optional function can slow or stop the escalator to reduce energy consumption by about 30%.[1]

- A regenerative converter enables electric power generated as the escalator descends with a certain passenger load to be converted for other electrical needs in the building.
- Optional LEDs used for various lights reduce power consumption and achieve long life.

[1] Compared to Mitsubishi Electric's previous model without inverter; assuming step width of 1,000mm, rise of 5,000mm, 100 passengers per hour and 20 to 30 minutes of stand-by per hour

3) Industry-leading compact size (Type S1000)

- By optimizing the equipment space, Mitsubishi Electric has achieved the industry's shortest escalator length[2] for more flexible building design.
- Some 25% reduction in truss weight[3] was achieved by substantially reducing the amount of structural material, without resulting in any loss of structural strength.

[2] Based on in-house research of models in the Type S1000 model range, as of Nov. 2020
[3] Compared to Mitsubishi Electric's previous model

Overview

Product name	Type[4]	Rated speed	Price	Launch	Targeted Sales
u series Escalator	Type S1000 Type S800 Type S600	0.5 meter per second	By quote	December 7, 2020	500 units per year

[4] S1000 (step width: 1,000 mm) for 2 passengers and both S800 (800 mm) and S600 (600 mm) for 1 passenger

Background

Escalators are used by passengers of all ages, from small children to the elderly, so there is a constant need to enhance safety as well as to improve energy savings due to ongoing environmental concerns. To address such requirements, Mitsubishi Electric has designed its new u series escalators to offer enhanced safety and energy conservation, including with a number of useful new optional functions.

Contributions to the environment

- Power consumption is reduced by installing inverters as standard equipment and using LEDs for lighting.
- Reducing the weight of trusses reduces CO_2 emissions in material manufacturing and scrapping.

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About Mitsubishi Electric Corporation

With nearly 100 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. Mitsubishi Electric enriches society with technology in the spirit of its corporate statement, "Changes for the Better," and environmental statement, "Eco Changes." The company recorded a revenue of 4,462.5 billion yen (U.S.$ 40.9 billion*) in the fiscal year ended March 31, 2020. For more information, please visit www.MitsubishiElectric.com

*U.S. dollar amounts are translated from yen at the rate of ¥109=U.S.$1, the approximate rate on the Tokyo Foreign Exchange Market on March 31, 2020

ATTACHMENT

Features in Detail

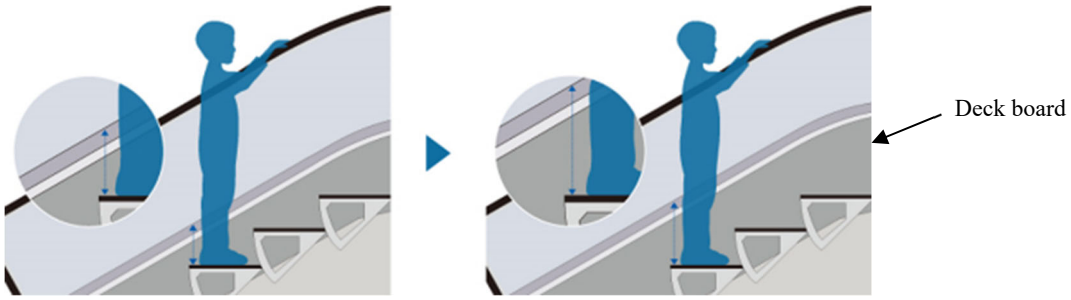
1. Enhanced safety functions ensure high-level safety and comfort

(1) “Slow-stop function” (standard)

In emergencies, safety devices are activated to slowly decelerate and then stop the escalator to reduce the risk of passengers stumbling or falling over. In addition, in case of a power outage, the escalator can be gently brought to a stop (optional feature).

(2) New design helps to prevent people from stepping on the deck board (standard)

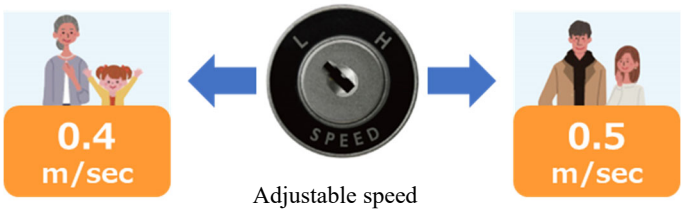
The redesigned curb-like deck boards are extra high to make it difficult for passengers to put their feet on, or stand on, this stationary part.



Previous model　　u series

(3) Variable-speed operation (optional)

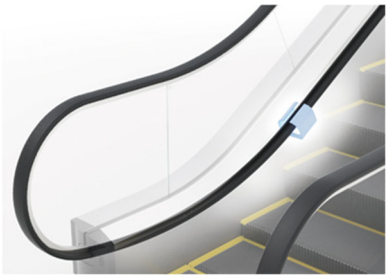
The escalator speed can be changed manually with a key switch when, for example, the escalator is frequently used by elderly people or people who feel uneasy on descending escalators.



Adjustable speed

(4) Handrail sterilizer (optional)

A built-in handrail sterilizer disinfects the handrail with an ultraviolet light during escalator operation.



2. VVVF and LED lights for energy savings

(1) VVVF (standard)

- Optimized motor efficiency

  Electric current and voltage are optimized according to motor load for improved efficiency, particularly when the escalator is handling light loads.

- Two energy-saving modes

  Controls the travel speed depending on the number of passengers. In the case of few passengers, the escalator travels at 0.45 meter per second and when passengers increase the speed gradually accelerates to 0.5 meter per second. In the case of no passenger, the speed gradually decelerates to 0.2 meter per second.

- Regenerative converter

  Power that is generated when the escalator descends with a certain passenger load can be used for other electrical-power needs in the building.

(2) LEDs for energy savings and long service life

LED lights are used for the skirt guard lightning, under-handrail lightning, comb light and step demarcation lightning (all optional). Compared to fluorescent lighting, the LEDs reduce energy consumption by about 75% and last longer.

3. Industry-leading compact size (Type S1000)

The Type S1000's optimized equipment configuration achieves industry-leading compactness, namely, a total escalator length that is approximately 6% shorter than Mitsubishi Electric's previous model. Also, structural optimization (topology) was deployed to minimize the amount of material used, resulting in a 25% reduction in truss weight compared to the company's previous model but with no loss of structural strength. The model's compactness and reduced weight make installation easier and allow greater flexibility in architectural designs, such as more effective use of space in front of the boarding area. In addition, CO_2 emissions due to the manufacturing and scrapping of product materials are reduced by about 1.27 tons per unit.[5]

[5] Based on in-house research. Refining iron ore in blast furnace produces 2.3 tons of CO_2/ton iron (CO_2 emissions during transportation, e.g. from rock quarry to steel plant, are not considered).