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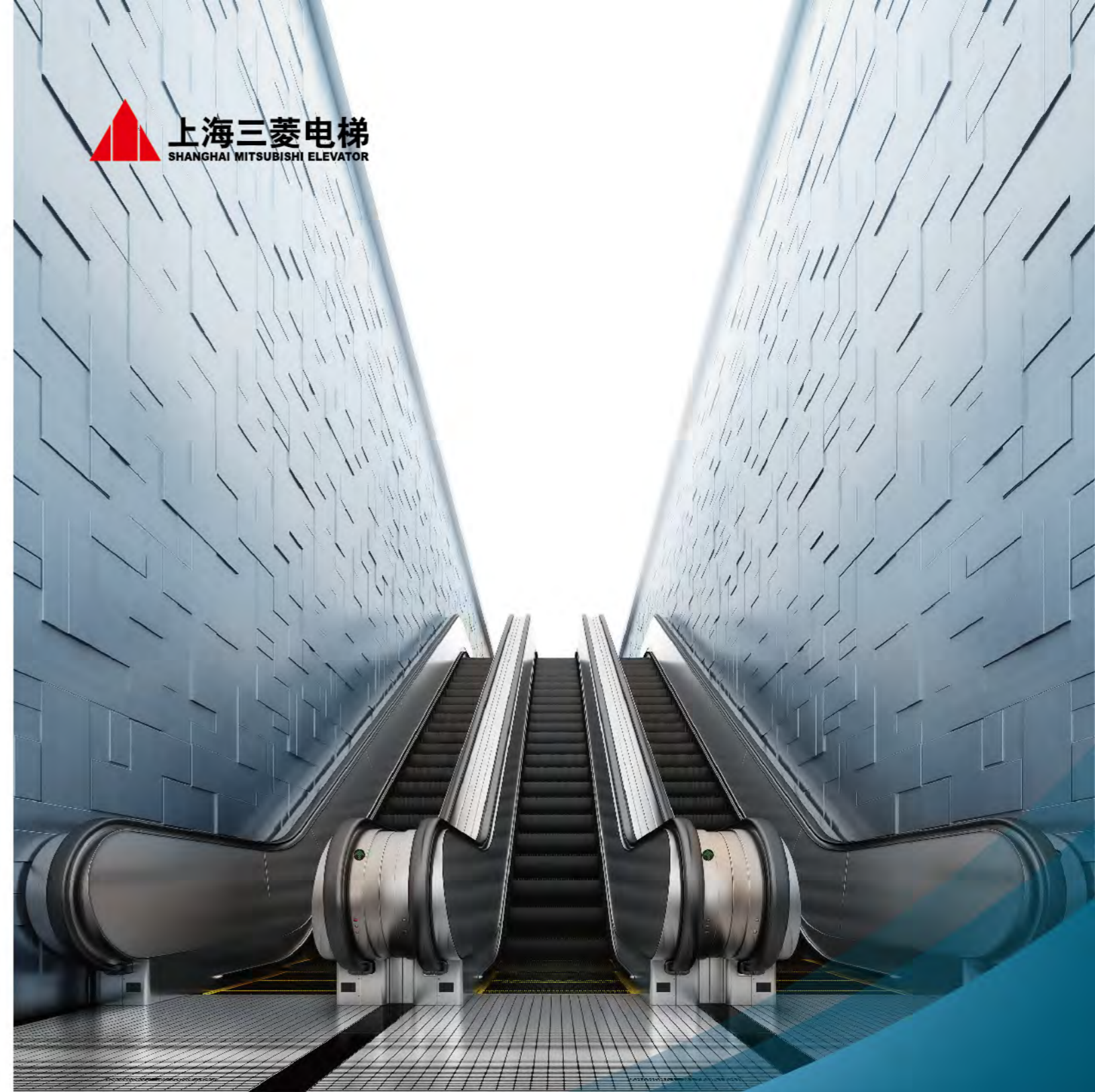
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To response to largely rising height To satisfy with large passenger flow transportation
Mitsubishi Elevator launched Public Service Escalator

Series HE-II

Public Service Escalator

Series HE-II Escalator

Glorious Relay Creates Splendid Future

To deal with large passenger flow transportation and lifting height, Mitsubishi Elevator Enterprise designed Series HE-II Escalator in accordance with the requirement for public service escalator in GB16899-2011. This special escalator is mainly suitable for public transportation, such as subway stations, light rail stations, airports etc. and can also be used for other places such as hotels, shopping malls etc.



High-technology Exceeding Sustained power.....	P.3
Challenge Special Environment.....	P.5
Safety Devices Double Protection.....	P.7

General

Fashion and Style.....	P.9
Decorative Parts Show Personal Configuration.....	P.11

Design

Function Table.....	P.13
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Function

Basic Specification.....	P.14
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Specification

High Precision Worm Gear and Helical Gear Reducer



Public service escalator has to firstly face the challenge of sustained heavy duty, carry high precision worm gear and helical gear reducer as well as highly integrate both advantages of worm gear drive and helical gear drive. Worm and gear can transmit larger moment in relatively small spaces, while helical gear owns low noise, stable drive and good damping. Their effective combination makes the escalator more efficient to fight against the sustained load pressure.

Step Chain



It is equipped with enhanced step chain, which ensures safety and comfort under heavy duty of Series HE-II.

Unloading Guide Rail



In the face of upper great tension, the upper bending section of Series HE-II escalator is equipped with four unloading guide rails to ensure the bearing force is close to zero by separating with guide rail when the roller comes to upper bending section, so as to lower roller wear and lengthen service life.

Full Frequency Conversion Control System with Energy Feedback



To maximize the efficiency of the escalator.



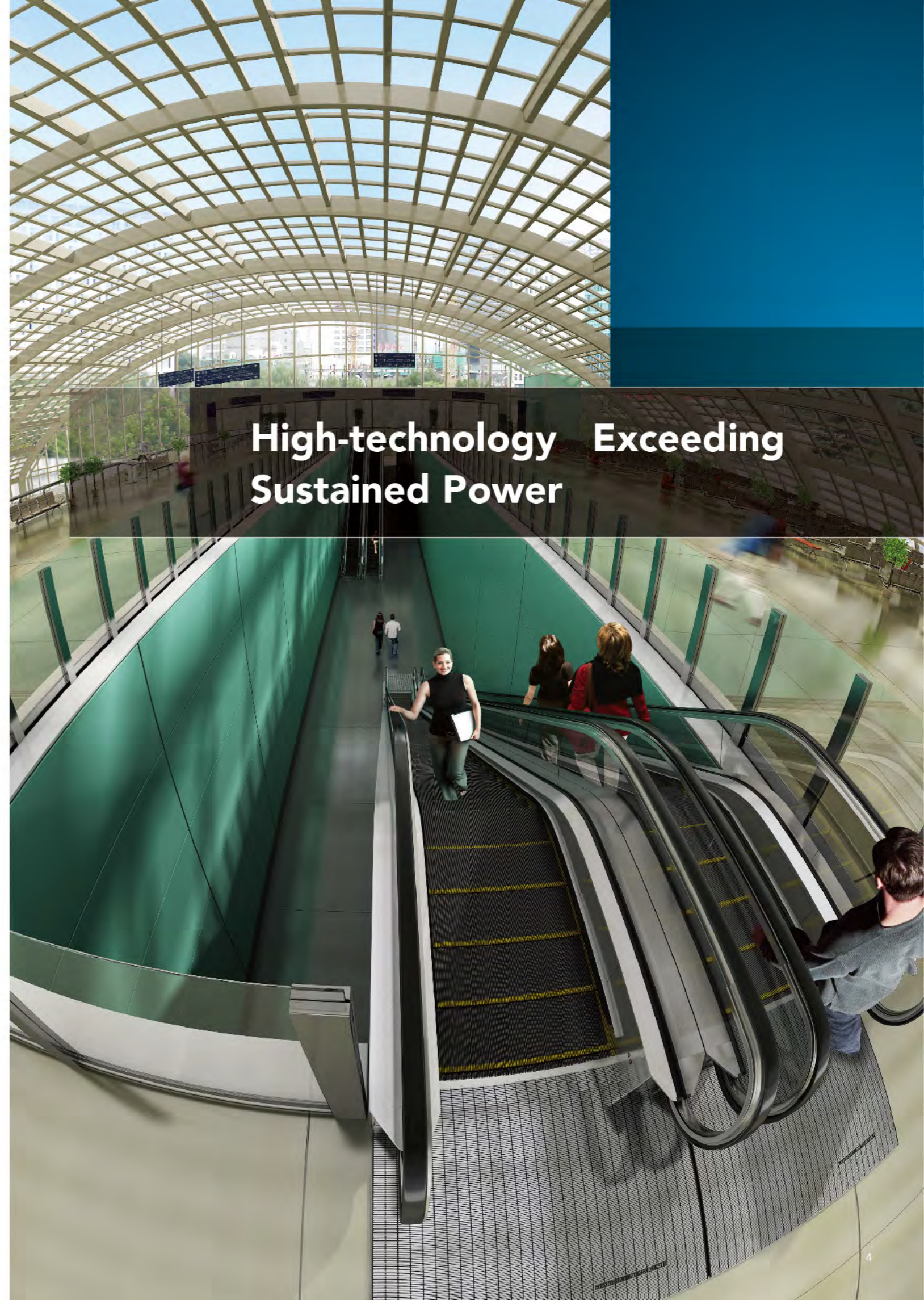
To ensure running efficiency and to reduce energy



Output voltage decreases with the decrease of passenger flow.



Handle feedback and use saved energy through intelligent double IPM professional frequency converter.



High-technology Exceeding Sustained Power



Challenge Special Environment

Roller Sealing Design



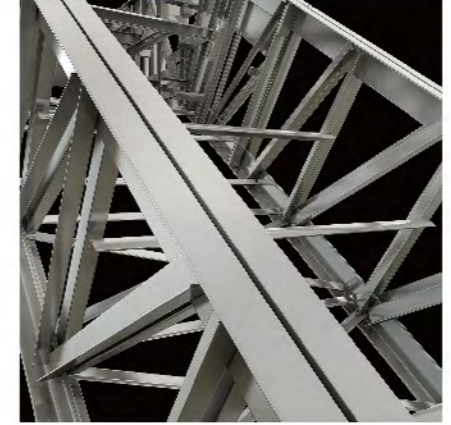
Generally, public service escalators face high temperature, sand, steam and other special operation environment challenges. Here Series HE-II escalator employs full sealed step roller design to reduce dust into bearing, lengthening the service life of rollers.

Reliable Truss Rust-proof Treatment

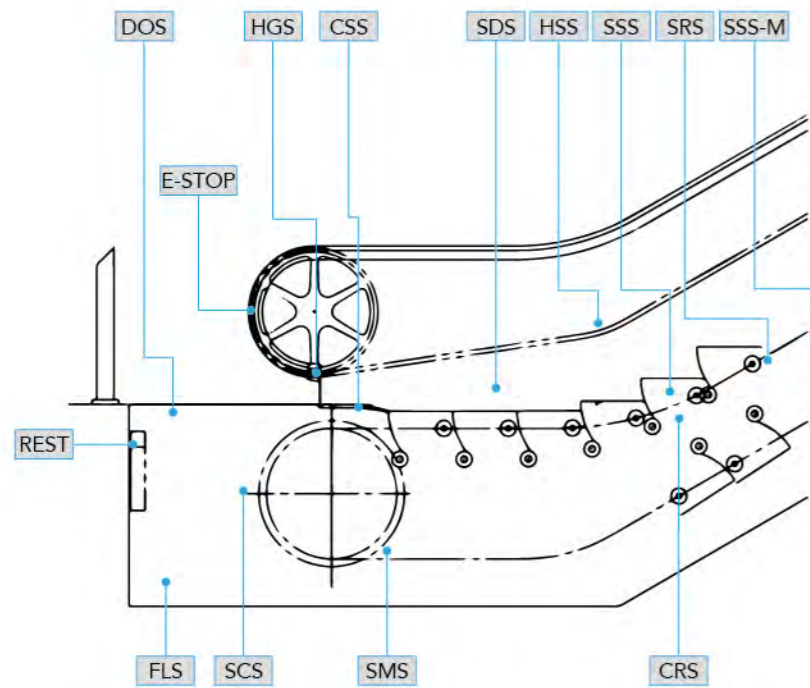
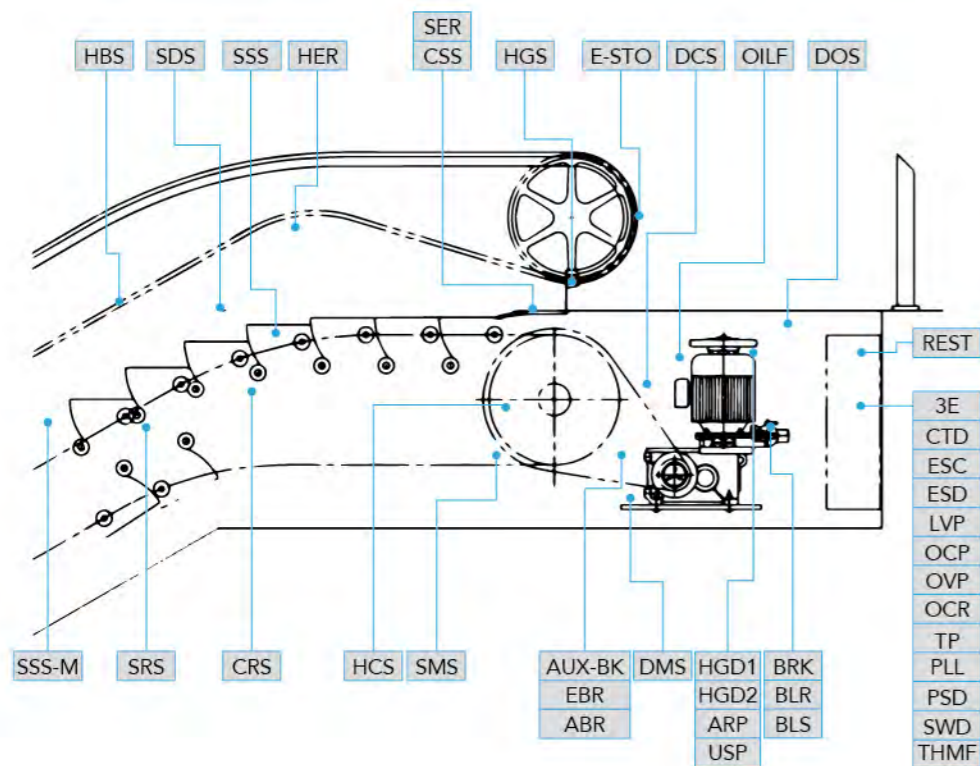


As external humid environment is inevitable, Series HE-II escalator adopts high strength angle steel truss material with advantages of bending resistance and anti corrosion.

Double-deck Truss



When the escalator reaches a certain span, Mitsubishi double-deck truss can be used to fully meet the requirements for radial degree and strength. The truss is steady and firm to further safety.



Configuration Table of Safety Devices

3E	Phase Failure and Phase Reversal Protection	S
ARP	Unintentional Reversal Protection	S
AUX-BK	Auxiliary Brake	S
EBR	Auxiliary Brake Apply Detection	S
ABR	Auxiliary Brake Lift Detection	S
BRK	Operational Brakes	S
BLR	Operational Brake Action Detection	S
BLS	Operational Brake Wear Detection	S
CRS	Curved Rail Safety Device	A
CSS	Comb Safety Device	S
CTD	Contactor Action Detection	S
DCS	Drive Chain Safety Device	S
DOS	Deck Open Safety Device	S
DMS	Driving Machine Safety Device	A
E-STOP	Emergency Stop Button	S
ESC	Electrical Safety Circuit Protection	S
ESD	Stopping Distance Detection	S
FLS*2	Flood Level Alarm	S
HER*1	Handrail Static Elimination Device	S
HBS*1	Handrail Breakage Safety Device	A
HCS	Handrail Chain Safety Device	A
HGD1	1.2 Times Overspeed Protection	S
HGD2	1.4 Times Overspeed Protection	S
HGS	Handrail Gate Safety Device	S
HSS*1	Handrail Speed Detection	S
LVP	Low-Voltage Protection	S
OCP	Over-Current Protection	S
OVP	Over-Voltage Protection	S
OCR	Over-Current Relay	S
OTP	Motor Overheating Protection	S
OILF	Oil Level Alarm	S
PLL	Power Phase Monitoring	S
PSD	Passenger Sensor Failure Detection	S
SCS	Step Chain Safety Device	S
SDS	Skirt Anti-Pinch Safety Device	S
SER	Step Antistatic Device	S
SMS	Step Missing Protection	S
SRS	Step Sagging Safety Device	S
SSS	Skirt Plate Safety Device	A
SSS-M	Middle Skirt Plate Safety Device	A
SWD	Start Switch Bonding Detection	S
THMF	Inverter Overheating Protection	S
USP	Over-Low Speed Protection	S
REST	Driving Station And Return Station E-STOP Safety Device	S

Notes:
 *1: Different models (Type S, Type P) have different locations.
 *2: Standard configuration is only for outdoor use or semi-outdoor use.
 S: Standard; A: Alternative



Safety Devices Double Protection

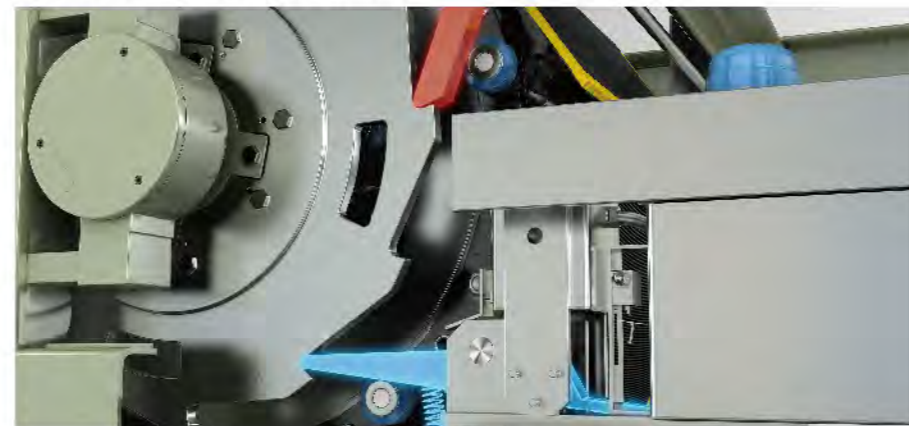
Prevent escalators from Backspin to Ensure Safety

Drive Chain Safety Device D.C.S

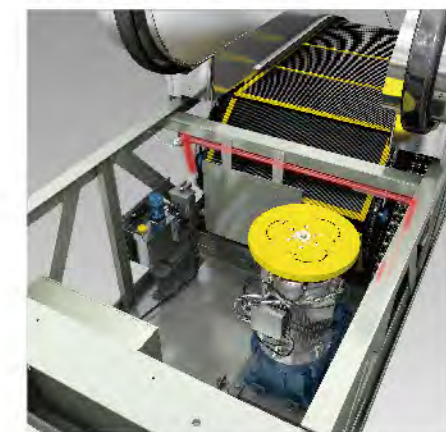


For DCS safety device with unique detection and action protection functions, once the drive chain is found broken or excessively long, the spine brake will immediately trigger upper sprocket and safety detection switch to immediately start the additional brake, stopping the escalator.

Stop Device - Double Spike Brake



Double Protection



Mitsubishi owns more reliable and effective security devices, which provide you with double detection and double protection.

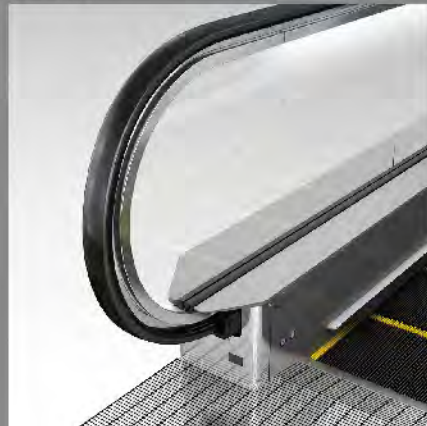
Double GOV Detection Device



Once an abnormal operating speed appears, double GOV detection device will immediately trigger stop device, fundamentally preventing the escalator from backspin.

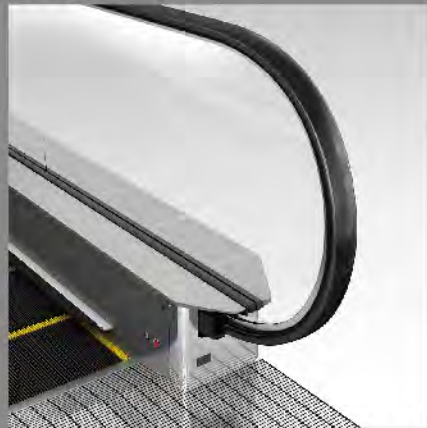


Type of the Balustrade
HES-LBF



- Instructions to the Components Indicated in the Figure
- Internal Side Plate
 - Rectangular glass plate
(glass joints perpendicular to running direction of the steps)
 - Steps
 - Integral aluminum alloy die casting step (with black coating)
 - Handrail
 - Black (Color No. 001) (With other options available)
 - Internal and External Cover Plates
 - Hairline Stainless Steel
 - Skirt Panel
 - Hairline Stainless Steel
 - Lighting
 - Handrail lighting and lighting under steps
 - Front Plate
 - Stainless Steel with Anti-skid Grooves

Type of the Balustrade
HES-BF



- Instructions to the Components Indicated in the Figure
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 - Skirt Panel
 - Hairline Stainless Steel
 - Lighting
 - Lighting under steps
 - Front Plate
 - Stainless Steel with Anti-skid Grooves

Series HE-II escalators own simple and smooth appearance and first-class texture. The main parts are made of hairline stainless steel and guardrail is optionally made of toughened glass or stainless steel plate and other materials; a variety of trendy hand straps and colored glass panels can be selected to match with any building environment.

Type HEP-BF escalator is equipped with full stainless steel handrail full of power and charming hairline fine processing, solid and durable, especially for public transportation center.

Type HES-BF escalator is equipped with very fine stainless steel handrail guide rail with very compacted structure to make passengers feel that the hand strap slides on glass; this type of escalator is concise and lively, burnishing hotels, shopping centers and other high range places.

Type HES-LBF escalator is equipped with lighting under handrail, which creates a bright space. Quiet and smooth light especially serves as a foil to the elegance of the place.

Fashion and Style

Inspiration of Technologies from Life

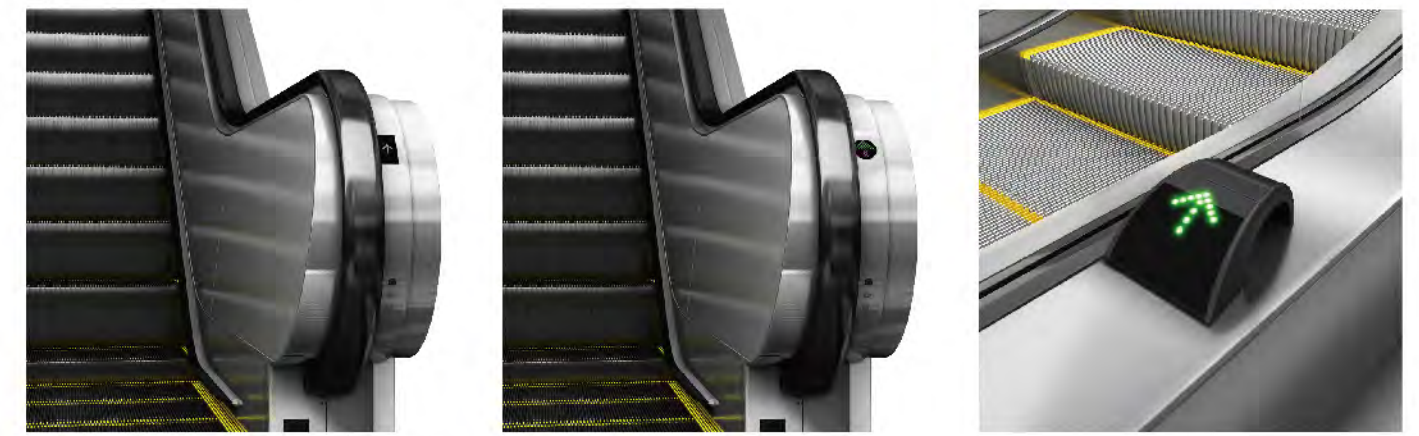
Type of the Balustrade
HEP-BF

- Instructions to the Components Indicated in the Figure
- Internal Side Plate
 - Hairline Stainless Steel
 - Steps
 - Integral aluminum alloy die casting step (with black coating)
 - Handrail
 - Black (Color No. 001) (With other options available)
 - Internal and External Cover Plates
 - Hairline Stainless Steel
 - Skirt Panel
 - Hairline Stainless Steel
 - Lighting
 - Lighting under steps
 - Front Plate
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Operation Indicator

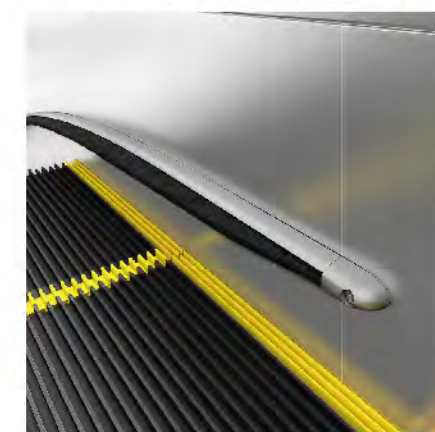


Operations indicator at the handrail newel balustrade
 (Only for HEP-BF)

ZIN-01
 (Only for indoor)

Decorative Part Personal Configuration
 Customize Your Own Decoration Scheme

Pinch-proof Device at the Skirting



Match silver base with black hairbrush

Skirt Panel



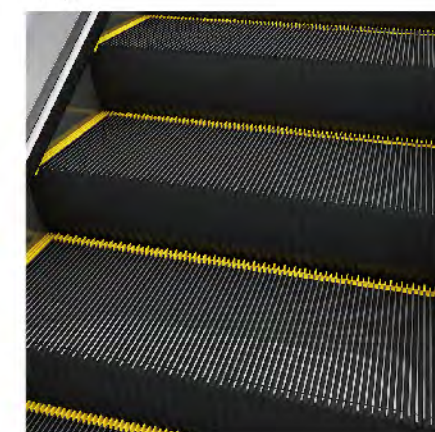
Hairline stainless steel

Internal and External Cover Plates



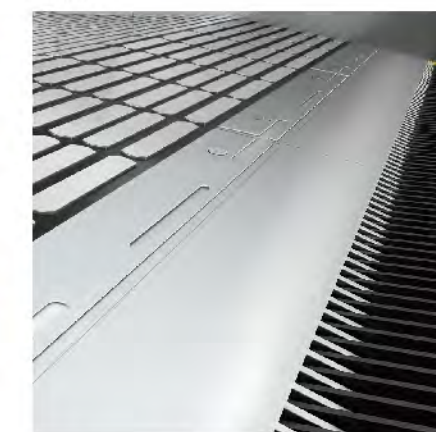
Hairline stainless steel

Steps



Aluminum Alloy Steps
 With yellow resin strips on three sides, black grey coating

Comb



Silver Aluminum Alloy

Front Plate



Stainless Steel with Anti-skid Grooves

Features

S: Standard A: Alternative

Feature	Description	Code	
Control and Security Features			
Phase Failure and Phase Reversal Protection	When a phase failure or a phase reversal is detected in the power supply, the escalator will stop.	3E	S
Auxiliary Brake Lift Detection	When the auxiliary brake cannot normally lift, the escalator will be prevented from restarting.	ABR	S
Unintentional Reversal Protection	When an unexpected reversal is detected, the escalator will stop.	ARP	S
Auxiliary Brake	When the running speed exceeds 1.4 times of the nominal, or the running direction is opposite to the specified, auxiliary brake will work to stop the escalator or the moving walk.	AUX-BK	S
Operational Brake Action Detection	When operational brake cannot normally lift or apply, the escalator will stop.	BLR	S
Operational Brake Wear Detection	When the operational brake wears out, the escalator will be prevented from restarting.	BLS	S
Operational Brake	Operational brake applies to stop the escalator and maintain stationary.	BRK	S
Curved Rail Safety Device	When a step run abnormally caused by a foreign object pinched between the step riser and adjacent step tread, the escalator will stop.	CRS	A
Comb Safety Device	When a foreign object is stuck between the step riser and the comb plate, the escalator will stop.	CSS	S
Contact Action Detection	When a contactor behaves abnormally, the escalator will stop.	CTD	S
Drive Chain Safety Device	When a drive chain ruptures or elongates abnormally, the escalator will stop.	DCS	S
Driving Machine Safety Device	When the driving machine moves unexpectedly, the escalator will stop or starting shall be prevented.	DMS	A
Deck Open Safety Device	When an access cover plate is removed, the escalator will stop and starting shall be prevented.	DOS	S
Auxiliary Brake Apply Detection	When the auxiliary brake cannot normally apply, the escalator will be prevented from restarting.	EBR	S
Electrical Safety Circuit Protection	When any of the electrical safety devices in series works, the escalator will stop.	ESC	S
Stopping Distance Detection	When the stopping distance exceeds 1.2 times of the maximum, the escalator will be prevented from restarting.	ESD	S
Emergency Stop Button	The button is used to stop the escalator in case of emergencies.	E-STOP	S
Flood Level Alarm	When the flood level in lower truss exceeds the maximum, the escalator will stop.	FLS *1	S
Handrail Breakage Safety Device	When a handrail breaks or looses excessively, the escalator will be stop.	HBS	A
Handrail Chain Safety Device	When a handrail chain breaks, the escalator will stop.	HCS	A
Handrail Static Elimination Device	The handrail anti-static device eliminates the electrostatic loading on the handrail.	HER	S
1.2 Times Overspeed Protection	Before the running speed exceeds 1.2 times of the nominal, the escalator will stop.	HGD1	S
1.4 Times Overspeed Protection	Before the running speed exceeds 1.4 times of the nominal, the escalator will stop.	HGD2	S
Handrail Gate Safety Device	When a foreign object gets pinched in the handrail gate, the escalator will stop.	HGS	S
Handrail Speed Detection	When the handrail speed keeps lower than the set value for a period of time, the escalator will stop.	HSS	S
Low-Voltage Protection	When the inverter is under voltage, the escalator will be shut off and stop.	LVP	S
Over-Current Protection	When the inverter works with overcurrent, the escalator will stop.	OCR	S
Over-Current Relay	When the motor works in overload, the escalator will stop.	OCR	S
Oil Level Alarm	When the oil level in the oiler decreases to lower than the minimum, the escalator will be prevented from restarting.	OILF	S
Motor Overheating Protection	When the motor is overheated, the escalator will stop.	OTP	S
Over-Voltage Protection	When the inverter works with overvoltage, the escalator will stop.	OVP	S
Power Phase Monitoring	The power phase and frequency are monitored automatically to switch smoothly and rapidly between the inverter and Bypass.	PLL	S
Passenger Sensor Failure Detection	The escalator will run without standby mode in case of a failure of the passenger sensors.	PSD	S
Driving Station And Return Station E-STOP Safety Device	When an emergency stop button established in either driving or return station is pressed, the escalator will stop and starting shall be prevented.	REST	S
Reverse-Direction Entering Warning	When a passenger enters in a reverse direction, the escalator or the moving walk will start running for a while and buzz to warn the passenger.	REVR	S
Step Chain Safety Device	When a step chain ruptures or elongates abnormally, the escalator will stop.	SCS	S
Skirt Anti-Pinch Safety Device	Devices with rigid foundation are established on the skirt plates to prevent a foreign object or foot from getting pinched in the gap between the skirt plate and the step.	SDS	S
Step Antistatic Device	This device is used to prevent steps generating electrostatic loading.	SER	S
Step Missing Protection	If steps are missing, the escalator will stop.	SMS	S
Step Sagging Safety Device	When any part of a step sinks and fails to mesh with the comb plate, the escalator will stop.	SRS	S
Skirt Plate Safety Device	When a foreign object is pinched in the gap between the step and the skirt plate at terminal areas, the escalator will stop.	SSS	A
Middle Skirt Plate Safety Device	When a foreign object is pinched in the gap between the step and the skirt plate at middle areas, the escalator will stop.	SSS-M	A
Start Switch Bonding Detection	When a start switch contact bonds, the escalator will be prevented from restarting.	SWD	S
Inverter Overheating Protection	When the inverter is overheated, the escalator will stop.	THMF	S
Over-Low Speed Protection	When the running speed decreases to lower than the minimum, the escalator will stop.	USP	S
Emergency Operations			
Fire Stop	When receiving the fire action signal, the escalator will stop.	FSS	A
Operations and Service Functions			
Control Cabinet LCD Control Panel	Control panel mounted in the control cabinet can be used to set parameters, and check the running state and error codes, with LCD used for display.	CPS-LCD	S
Heating Device	With a thermal sensor monitoring the temperature inside the truss in real time, the heating device will prevent the escalator or the moving walk from restarting when it is lower than the set value and can start or stop automatically with temperature.	HEAT	A
Inspection and Maintenance	When the escalator is at the inspection and maintenance mode, it is easily installed and debugged.	INSP	S
Automatic Lighting Control	Lightings are automatically switched on and off based on the running state.	LO-A *2	A
Manual Lighting Control	Lightings must be manually switched on and off.	LO-M *2	A

S: Standard A: Alternative

Feature	Description	Code	
Operations and Service Functions			
Automatic Operation	By the passenger detection sensors, the escalator will run at the nominal speed when there is a passenger and automatically switch to standby mode during vacancy.	MDA	S
Multi-Function Operation Panel	Display panels mounted at entrance and exit of the escalator can be used to set parameters, and check the running state and error codes.	MFP	S
Automatic Oiling	Lubrication of step chains, drive chains and handrail drive chains is conducted at a preset time.	OIL	S
Passengers Sensor (Microwave Type)	Microwave passenger sensors.	PSM *3	A
Passengers Sensor (Post Type)	Photoelectric post-type passenger sensors.	PSP *3	A
Remote Stopping	The escalator can be stopped by a remote switch.	RCSP	A
Remote Starting	The escalator can be started by a remote switch.	RCST	A
Back-Up Start	In case of a failure of the inverter, the escalator can be manually switched to start directly on the grid.	SBK	S
Low-Speed Standby	The escalator will run at a lower speed than the nominal without passenger.	SBLS *4	A
Stop Standby	The escalator will stop without passenger.	SBSP *4	A
Manual Speed Switchover	The running speed can be switched manually between the two preset ones.	SCM	S
Star-Delta Starting	The escalator starts in star-delta mode. As a backup function for variable frequency escalator or moving walk.	SSD	A
Variable Running Direction	Running direction of the escalator is variable.	UDA	S
Variable Frequency Mode with Energy Feedback	The escalator is always powered by the inverter and the energy generated by the passenger downward will be given back to the grid.	VFFB	S
Information and Display			
Voice Announcer(English)	Voice Announcer is used to broadcast the safety cautions(English)	AAN-S03	A
Safety Device Code Display	Error codes are displayed and correspond one to one with the safety devices.	ASD	S
BA Interface	The escalator or the moving walk's basic running state signals can be output through dry contacts.	BA	A
Buzzer	The buzzer produces a buzzing sound as a signal of starting, error or entering in reverse direction.	BUZ	S
Running Direction Indicator	Inform the passengers of running direction, stop or no entry information.	DI	S
Cover Plate Anti-Theft Alarm	When an access cover plate is opened unexpectedly, the buzzer will alarm continuously.	DOA	A
Fire Stop Feedback	When the escalator stops in case of fire, fire stop signal will be outputted.	FE-CP	A
Balustrade Lighting	Lighting at lower edge of handrail.	L-BAL *5	S
Comb Lighting	Lightings on the skirt plates at the entrances of steps or pallets.	L-COMB	A
LED Lighting	LED is used as the light source.	LED	S
Step Lighting	Lightings at the entrances of steps in order to show the edges between steps.	L-STP	S
MODBUS Interface	Running state and other information is transported through MODBUS.	MODBUS	A
Elevator and Escalator Intelligent Monitoring System	The system monitors the operation of elevators, escalators and moving sidewalks. The elevator can be equipped with remote control function; the escalator can be equipped with intelligent monitoring function, intelligent morning and evening switch and fault pre diagnosis service, intelligent voice broadcast function, etc.	SMARTEYE	A

Remarks

- *1: Outdoor or semi-outdoor
- *2: Optional from LO-A and LO-M
- *3: Optional from PSM and PSP
- *4: Optional from SBLS and SBSP
- *5: Only for Model: HES-LBF

Basic Specification

Item	Specification	Remarks
Serial No.	HEP-BF, HES-LBF, HES-BF	It can be corresponding to HES-BF
Nominal width between handrails (mm)	1200	
Velocity (m/s)	0.5, 0.65	
Angle of inclination (degree)	30	
Escalator rise (mm)	3000-16000	Model: HEP-BF, HES-LBF, HES-BF
	3000-10000	Model: HES-BF
Applicable environment	Indoor	Please contact Shang Mitsubishi Elevator for outdoor use/semi-outdoor use to ensure environment factors.
Upper Curvature Radius(mm)	2702, 3602	
Horizontal Steps Numbers	3, 4	
Drive system	VVF drive	
Drive power supply	380V50Hz three-phase and five-wire	
Illumination power supply	220V50Hz single phase	
Distance between center lines of handrails (mm)	1260	Model: HEP-BF
	1280	Model: HES-LBF, HES-BF
	1208	Model: HES-BF
Nominal width of steps (mm)	1004	
Maximum load (person/hour)	6000	Speed: 0.5m/s
	7300	Speed: 0.65m/s