

Frequency Inverters

NE-S1 Series

New Inverter – Small, Easy, Economical

HITACHI
Inspire the Next

NE-S1 Series



Frequency Inverters

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Space Saving

Side-by-Side Installation

Among the smallest form-factors in its category:

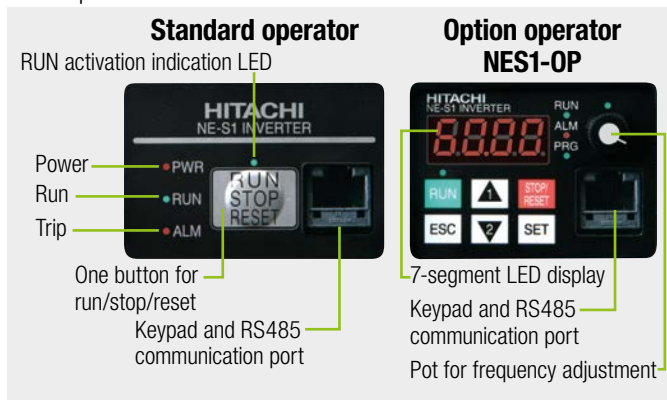
- The compact dimensions allow for space-saving side-by-side installation



NE-S1 Series

Easy Operation

- The RUN/STOP/RESET functions are integrated in one button for easy operation
- A multi-function, attachable operation panel is available as an option



Versatile Functions

- Energy saving function**
An automatic function has been implemented to minimize energy consumption.
- Arithmetic and delay functions**
Timer function can reduce the need for external hardware.
- Keypad / Terminal switching**
Source of frequency and run commands can be selected via intelligent terminal.

- 2nd motor function**
Settings for 1st and 2nd motor can be selected via intelligent input.
- Three-wire Operation**
Momentary Contacts can be utilized for RUN and STOP.
- Analog Input Disconnection - detection function**
The NE-S1 outputs a disconnection signal when the frequency command via the analog input is lost.

Model Name Indication



Model Line-up

Applicable motor kW	0.2	0.4	0.75	1.5	2.2	4.0
1-phase 200V	SBE	●	●	●	●	●
3-phase 400V	HBE	●	●	●	●	●

Global standards

Conformity to global standards

CE, UL, c-UL, c-Tick approvals.



Sink / source logic is standard

Logic input and output terminals can be configured for sink or source logic.

Wide input power voltage range

Input voltage of 240 V for 200 V class and 480 V for 400 V class as standard.

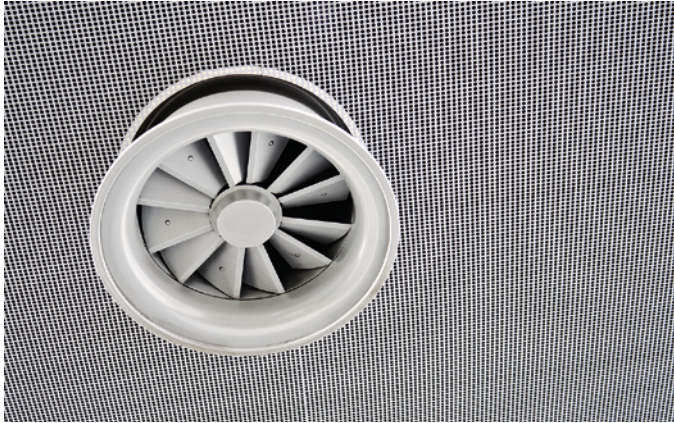


Applications

Optimal performance for energy saving applications such as fans and pumps

Fans and air conditioners

- Air conditioning systems
- Clean rooms
- Fans and blowers



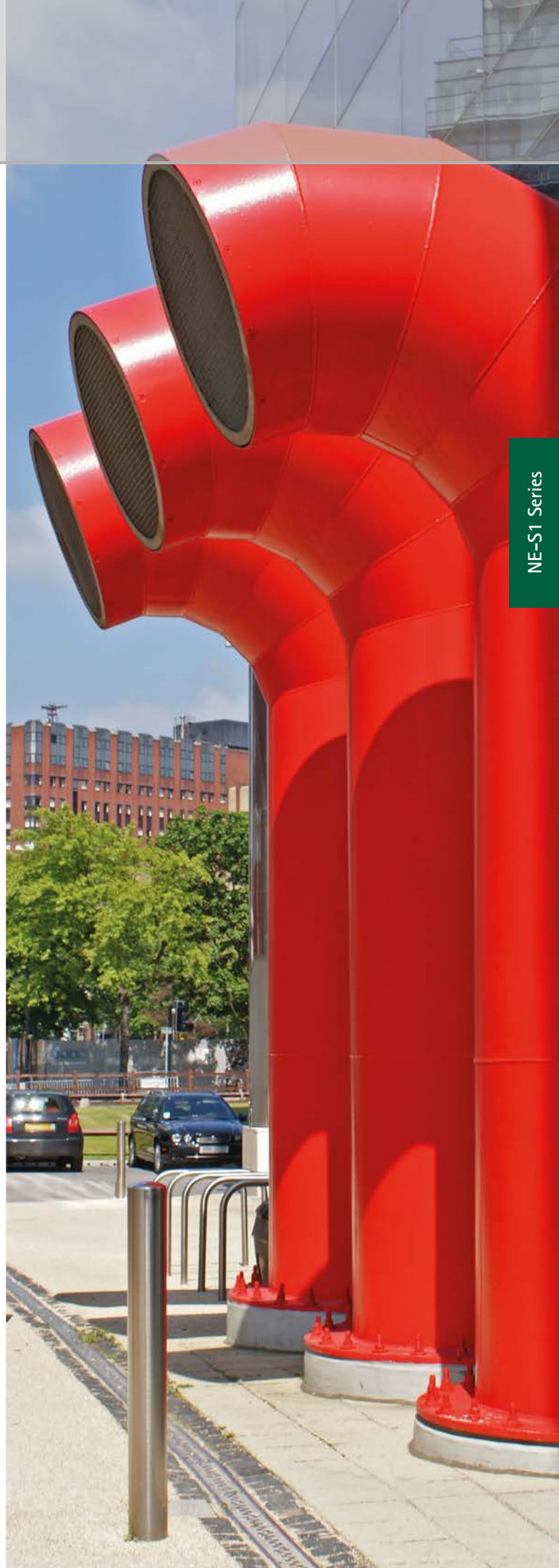
Pumps

- Water and wastewater pump systems
- Tankless water supply and drainage systems



Food Processing Machines

- Slicers
- Confectionery machines
- Mixers
- Fruit sorters



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Standard Specifications

1-phase 200V class

Model NES1-		002SBE	004SBE	007SBE	015SBE	022SBE	
Output Ratings	Applicable motor size, 4-pole kW	0.2	0.4	0.75	1.5	2.2	
	Rated capacity (kVA)	230V	0.5	1.0	1.5	2.8	3.9
		240V	0.5	1.0	1.6	2.9	4.1
	Rated output current (A)	1.4	2.6	4.0	7.1	10.0	
	Overload capacity (output current)	150% for 60 sec.					
Rated output voltage (V)	3-phase (3-wire) 200 to 240V (corresponding to input voltage)						
Input Rating	Rated input voltage (V)	1-phase 200-15% to 240V+10%, 50/60Hz ±5%					
	Rated input current (A)	3.1	5.8	9.0	16.0	22.5	
Enclosure		IP20					
Cooling Method		Self-cooling			Force ventilation		
Weight (kg)		0.7	0.8	1.0	1.2	1.3	

3-phase 400V class

Model NES1-		004HBE	007HBE	015HBE	022HBE	040HBE	
Output Ratings	Applicable motor size, 4-pole kW	0.4	0.75	1.5	2.2	4.0	
	Rated capacity (kVA)	380V	0.9	1.6	2.6	3.6	6.0
		480V	1.2	2.0	3.4	4.5	7.6
	Rated output current (A)	1.5	2.5	4.1	5.5	9.2	
	Overload capacity (output current)	150% for 60 sec.					
Rated output voltage (V)	3-phase (3-wire) 380 to 480V (corresponding to input voltage)						
Input Rating	Rated input voltage (V)	3-phase 380-15% to 480V+10%, 50/60Hz ±5%					
	Rated input current (A)	2.0	3.3	5.2	7.0	11.7	
Enclosure		IP20					
Cooling Method		Self-cooling			Force ventilation		
Weight (kg)		0.9	0.9	1.0	1.1	1.2	

General Specifications

Item	General Specifications		
Control	Control method	Line-to-line sine wave pulse-width modulation (PWM) control	
	Output frequency range	0.5 to 400Hz	
	Frequency accuracy	Digital command :±0.01%, Analog command ± 0.4% (25 ± 10°C)	
	Frequency setting resolution	Digital: 0.01Hz, Analog: (max frequency)/1000	
	Voltage/Frequency Characteristic	V/f control, V/f variable (constant torque, reduced torque)	
	Acceleration/deceleration time	0.00 to 3000 sec. (linear, sigmoid), two-stage accel./decel.	
	Starting torque	100%/6Hz	
Carrier frequency range	2.0 to 15kHz		
Operation	Frequency setting	Operator keypad (Option)	Up and Down keys / Value settings or analog setting via potentiometer on operator keypad
		External signal	0 to 10 V DC or 0/14 to 20 mA
		Serial port	RS485 interface (Modbus RTU)
	Forward/Reverse Stop/Run	Operator Keypad (Option)	Run key / Stop key (change FW/RV by function command)
Input terminal	Specification	5 terminals, 10kohm input impedance, sink/source logic selectable	
	Functions	36 functions assignable to each terminal	
Output signal	Intelligent output terminal	1 terminal, 27V DC 50mA max open collector output, 1 terminals 1c output 250V AC/30V DC 2.5A relay (AL0, AL1, AL2 terminals)	
	Monitor output terminal	Function	22 functions assignable to each terminal
Operator	Operation key	PWM output; Select analog output frequency monitor, analog output current monitor or digital output frequency monitor	
	Status LED Interface	1 unified key for RUN/STOP/RESET	
Environment	Operating temperature	Control power supply LED (Red), LED during operation (yellow-green), Operation button operation LED (yellow-green), LED during tripping (Red), 4LED in total	
	Storage temperature	-10 to 50°C (carrier derating required for ambient temperature higher than 40°C), no freezing	
	Humidity	-20 to 60°C	
	Vibration	20 to 90% RH	
	Location	5.9 mm/s ² (0.6G) 10 to 55Hz	
Other functions	Altitude 1,000 m or less, indoors (no corrosive gasses or dust)		
Protective functions	AVR (Automatic Voltage Regulation), V/f characteristic selection, accel./decel. curve selection, frequency upper/lower limit, 8 stage multispeed, PID control, frequency jump, external frequency input bias start/end, jogging, trip history etc.		
Options	Over-current, Over-voltage, Under-voltage, Overload, Overheat, Ground fault at power-on, Input over-voltage, External trip, Memory error, CPU error, USP error, Driver error, Output phase loss protection		
	Remote operator with copy function (WOP), Remote operator (OPE-SRmini, OPE-SR), Operator (NES1-OP), input/output reactors, DC reactors, radio noise filters, LCR filter, communication cables (ICS-1, 3)		



For more information about NE-S1 Frequency Inverters, please scan this QR-Code with your smartphone.

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