

# Frequency Inverters SJ700 Series

Powerful Inverter

# NEW!

# HITACHI

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## Powerful

- Position Control
- 0.3 Hz 200 % starting torque
- Trip-less

## Easy

- Parameter handling assistance
- Integrated EMC Filter, Brake unit to 22 kW
- Hardware & software backwards compatibility

## Flexible

- “Easy Sequence” programming function
- Fieldbus interfaces for Profibus, DeviceNet and CANopen

## Environmental Friendliness

- RoHS compliant

## [EzSQ: Easy Sequence] Programming function

### Logical control of an application via the inverter-integrated programming function

- Basic-like high level language
- Max. 512 Steps
- Position Control (with encoder)

Complex logic sequences are programmed using EzSQ and then downloaded to the SJ700 inverter.

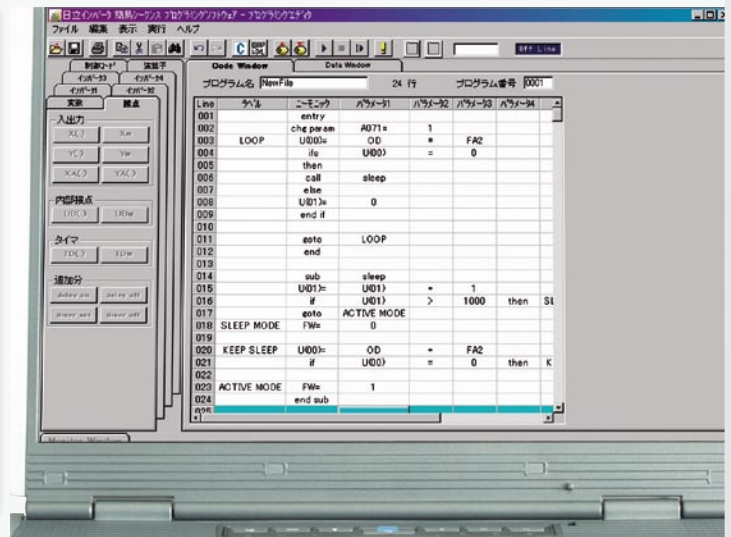
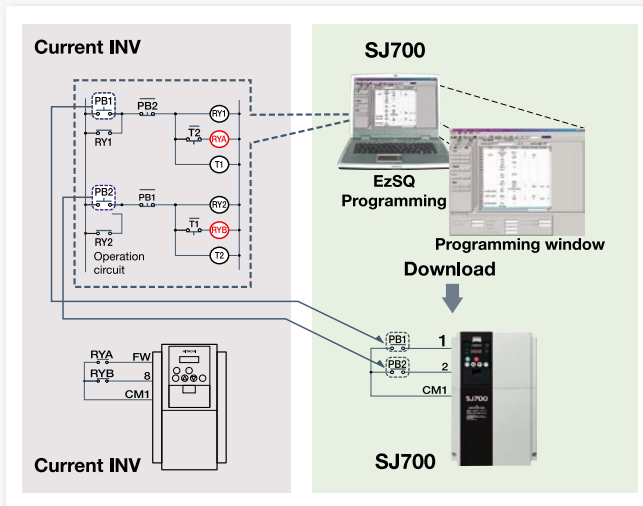
External logic using a PLC or relays can be avoided.

Examples of use include automatic speed control based on load, such as the swift-lift function of a crane. Other examples include:

- Sleep Mode
- Load Distribution
- and many more

### Usage example

Replace relay sequence through software



## Easy Parameter Handling

### Basic Mode

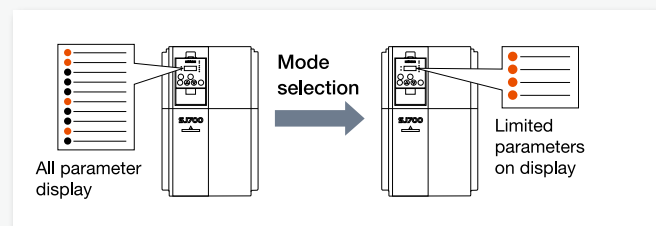
- Display only basic parameters

### User mode

- Display only user selected parameters

### Compare mode

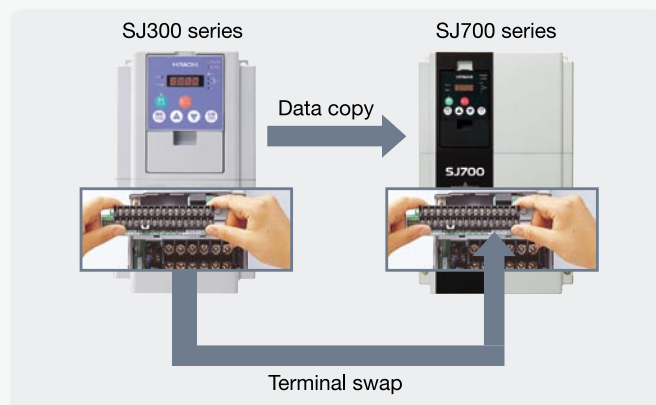
- Display only adjusted parameters



## Backwards Compatibility

Data from existing Hitachi SJ300 drives can be copied and downloaded via the remote operator (SRW-OJ) to an SJ700 drive.

The terminal blocks of the SJ300 and SJ700 are identical and can be seamlessly transferred.



# Frequency Inverters

## SJ700 Series

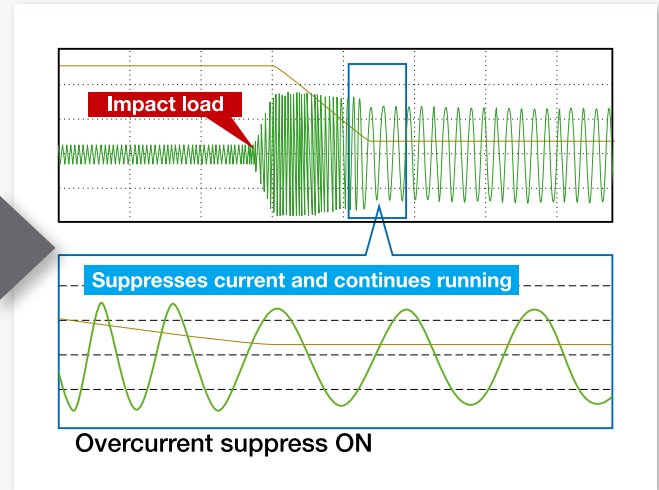
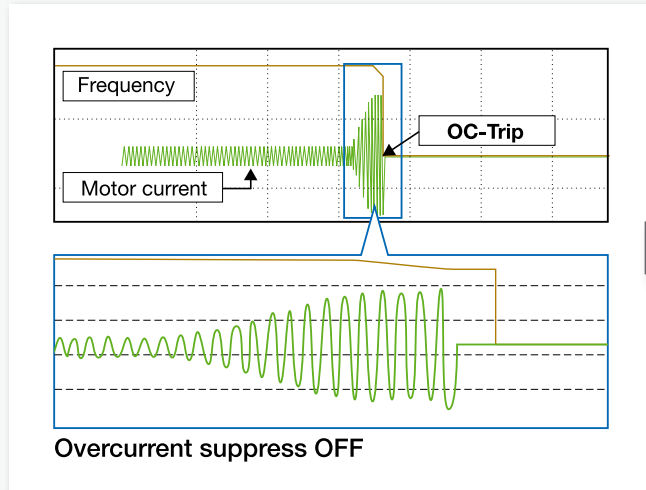
Powerful Inverter

### Trip Avoidance

#### Overcurrent & Voltage Suppression function

A combination of fast internal processing speed, improved current control and the overcurrent and over-

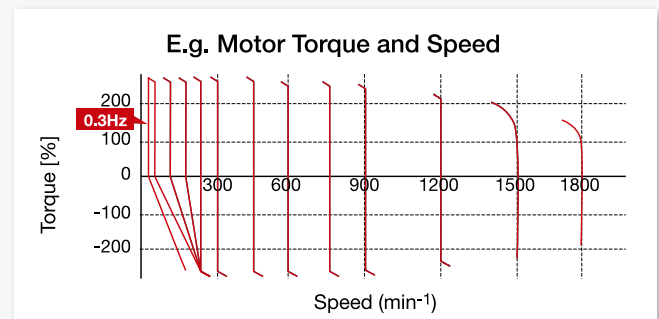
voltage suppression functions leads to the avoidance of inverter trip during acceleration and deceleration.



### High starting torque, powerful drive and easy set-up

Improvements to the Sensorless Vector Control allow for the realization of 200 % starting torque at 0.3 Hz. Auto-tuning makes adjustment of the motor constants easy.

Ideally suited for applications where high torque is needed such as cranes, extruders or lifts.



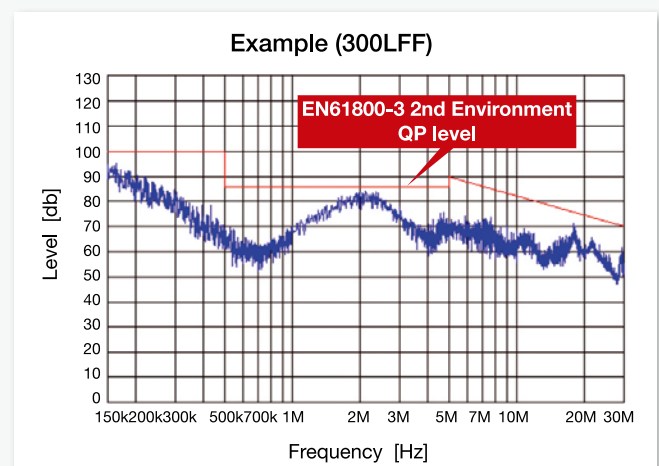
### Integrated Features

#### Built-in EMC filter, Brake Unit

Installation cost and space can both be reduced due to the integration of an EMC filter and braking unit.

The integrated filter meets the EN61800-3-2<sup>nd</sup> Environment standard.

The braking unit is integrated in units up to 22 kW



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## All features at a glance

Inverter SJ700		400V class																						
		007 HFEF2	015 HFEF2	022 HFEF2	040 HFEF2	055 HFEF2	075 HFEF2	110 HFEF2	150 HFEF2	185 HFEF2	220 HFEF2	300 HFEF2	370 HFEF2	450 HFEF2	550 HFEF2	750 HFEF2	900 HFEF2	1100 HFEF2	1320 HFEF2	1850 <sup>1</sup> HFE2	3150 <sup>1</sup> HFE2	4000 <sup>1</sup> HFE2		
Applicable motor (kW)		0.75	1.5	2.2	4.0	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	185 <sup>2</sup>	315 <sup>2</sup>	400 <sup>2</sup>		
Rated output current (A)		under development					14	19	25	32	38	48	58	75	91	112	under development					370	600	800
Rated input voltage		3 ~ 380 ... 480V, +10%, -15%, 50/60Hz ±5%																						
Rated output voltage		3 ~ 380 ... 480V (Corresponding to input voltage)																						
Line filter PFPB or BTFB		under development					032		064		80		115		125		under development							
Output frequency range		0.1...400Hz																		0.1...120 Hz				
Frequency accuracy (at 25 °C ±10 °C)		Analogue setting: ±0.2%, digital setting: ±0.01%																						
Frequency setting resolution		Analogue setting: Maximum frequency/4000, digital setting: 0.01 Hz																						
V/f characteristics		V/f (constant torque, reduced torque, free setting curve), sensorless vector control, closed loop vector																		V/f, sensorless vector control				
Overload capacity		150% for 60s, 200% for 3s																		150% for 60s, 180% for 0.5s				
Acceleration/deceleration time		0.01 - 3600 sec. (Linear/curve, accel./decel. Selection), Two stage accel./decel.																						
Starting torque		200% at 0.3Hz (SLV mode) 180% at 0.5Hz (SLV mode)																		-				
Revolution accuracy		±0.5% at sensorless vector control																						
Braking	Dynamic braking	Built-in BRD circuit										external dynamic braking unit (option)												
	Minimum Resistor size in Ohms	under development					70	50	50	24	24	20	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
DC braking mode		braking force, time and operating frequency																						
Inputs	Intelligent input terminals	8 Inputs, NO or NC, PNP or NPN logic																						
	Analogue inputs	3 Inputs, 0...10V, 4...20mA, -10...+10V																						
Outputs	Digital outputs	5 outputs, Type „Open Collector“, NO or NC, PNP or NPN logic																						
	Analogue outputs	3 Outputs, 0...10V, 4...20mA; 1 PWM 0...10V																						
	Relay output	Single Changeover Contact																						
PID loop operation		air velocity, temperature etc.																						
Serial port		RS485, RS422																						
Remote control up and down		Integrated motorised potentiometer with/without setpoint storage																						
Bus systems (optional)		Profibus, CANopen, DeviceNet																						
Standards		CE, UL, cUL, c-Tick																		CE, UL				
Thermal motor protection		Thermistor input PTC or NTC																						
Protection		Overcurrent, overvoltage, undervoltage, overload, extreme high temperature, ground fault protection at startup, electronic thermal overload protection etc.																						
Environmental conditions	Temperature / humidity	10...+50 °C temperature, 20...90% humidity (non condensing)																						
	Vibration / Installation	5.9 m/s <sup>2</sup> SJ700-055...220 HFE, 2.94 m/s <sup>2</sup> SJ700-300...550 HFE, 1.96 m/s <sup>2</sup> SJ700-1850...4000HFE2, 10...55 Hz, altitude 1000 m or less indoors, no corrosive gases or dust																						
CE		IEC/EN 61800-3 2nd environment																						
Options		remote operator, copy unit, cable for digital operator, Profibus, CANopen, DeviceNet, encoder feedback, reactor for improving power factor, noise filter, ProDrive Software, EzSQ Software																						
Protection class		IP20										IP00												
Weight kg (approx.)		under development					6		14		22		30		under development					140	210	360		

<sup>1</sup> Specifications only applicable when used in combination with appropriate DC-Choke

<sup>2</sup> without RoHs

## SJ700 Series Dimensions

		SJ700	007HFEF2 015HFEF2 022HFEF2 040HFEF2	055HFEF 075HFEF 110HFEF	150HFEF 185HFEF 220HFEF	300HFEF	370HFEF 450HFEF 550HFEF	750 HFEF2 900HFEF2	1100HFEF2 1320HFEF2	1850HFE2	3150HFE2	4000HFE2
Width	mm		150	210	250	310	390	390	480	695	680	1050
Height	mm		255	260	390	540	550	700	740	995	1300	1700
Depth	mm		140	170	190	195	250	270	270	370	450	450

Specifications are subject to change without notice

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