

HITACHI INVERTER

**HITACHI**  
Inspire the Next

# ***Ps-H100*** Series

High Performance  
Vector Drive



(This image shown here is indicative only. Please refer to the actual product for details.)

# High Driving Performance with Explosive Power and Fluency

## Driving Performance

### Powerful and Stable Drive

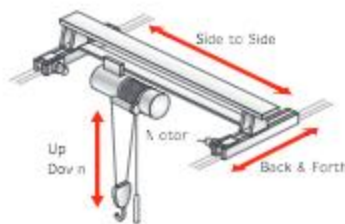
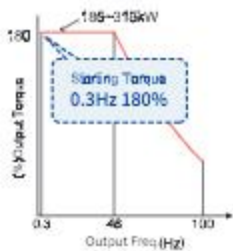
A variety of motors(IM/PM) can be adjustable to drive stable and powerful operation

#### Stable Operation in Critical Moment

- High starting torque at low speed range while in control of heavy loadings.

[Sensorless vector control (SLV)]  
[0Hz sensorless vector control]

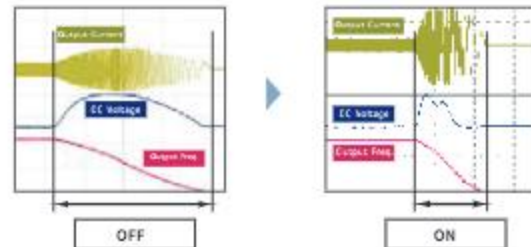
Overload Ability: 150% 60s, 200% 3s



※Sensorless Vector Control V with AC Rating

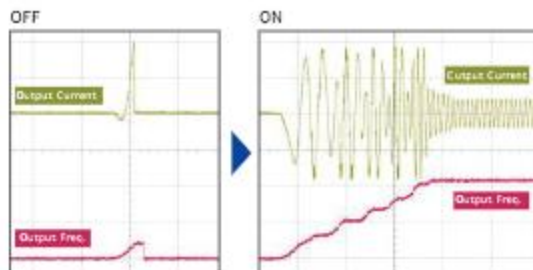
#### Over Magnetize Function

- Automatic speed adjustment manages ideal acceleration /deceleration speed to reduce the trip possibility from over-current, over-voltage and impact load.



#### "Smooth Running" As Always

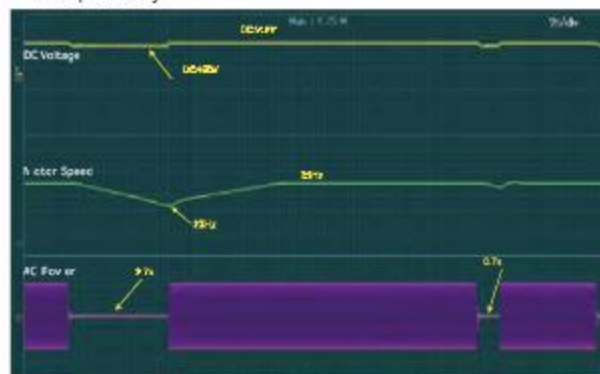
- Over-current suppress function



※ Please turn off this function for lifting equipment.

#### Low Voltage, No Problem!

- Offer a reliable solution when supply voltage tripped down unexpectedly.





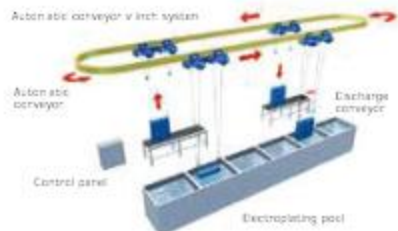
# Accessibility 2

## Easy Access to All Functions

New Features, New Functions, More Convenient!

### ▶ 2 Channel Pulse Feedback (Maximum 32kpps)

- Pulse train input could be used to achieve closed loop control, without additional feedback plug-in, which would reduce the system cost tremendously



### ▶ 0~10V/4~20mA Analog Inputs

- 2 analog inputs (3 inputs in total) as well as outputs are easily selected via DIP switch.
- Meet the needs of control and monitoring



### ▶ 4-path independent PID control

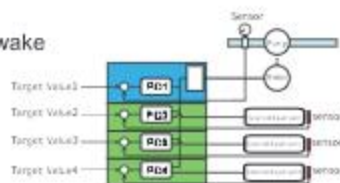
- 4-path PID can be freely used as the external PID controller. No additional PID controller is needed to save cost and space.

#### ■ PID soft start

Pressure boost dormancy/wake

PID velocity stack

PID target & feedback value calculation



### ▶ Saving Space

- Book structure, save installed space. (Saving at most 36% installed space compared with SJ700 series)



PsH100-3050HFCD~ with DCL Inside

# Flexibility 3

## Flexible and Wide Applicability

Ps-F100 series meets a wide range of needs in various fields

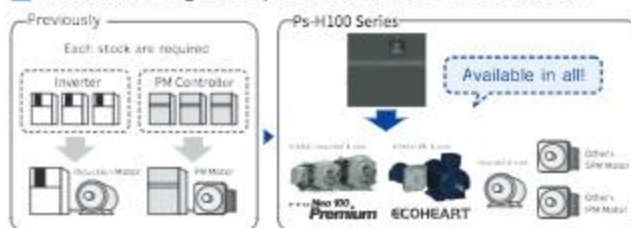
### ▶ Programmable (EzSQ) Function

- Easy customization to your own inverter. Specific behavior can be easily programmed into the inverter by BASIC-like program.



### ▶ Compatible with PM Motor

- Compatible with PM motor, make full use of PM motor, reduce power, increase efficiency.
- Sensorless magnetic pole detection function available

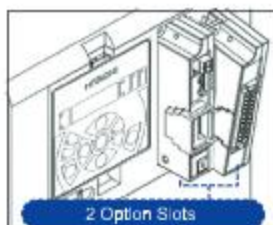


### ▶ "Slot-in" Option Cards

- Cassette type installation, building a smart factory.

- Option type is visually to see,
- Con n unction setting knob, setting easily,
- Status LED, monitoring easily,

| List of con n unction options |        |
|-------------------------------|--------|
| Profinet                      | P1-PN  |
| Profibus-DP                   | P1-PB  |
| EtherCAT                      | P1-ECT |
| Ethernet                      | P1-EN  |
| DeviceNet                     | P1-DN  |
| CANopen                       | P1-CO  |
| CC-Link                       | P1-CCL |
| Others                        |        |



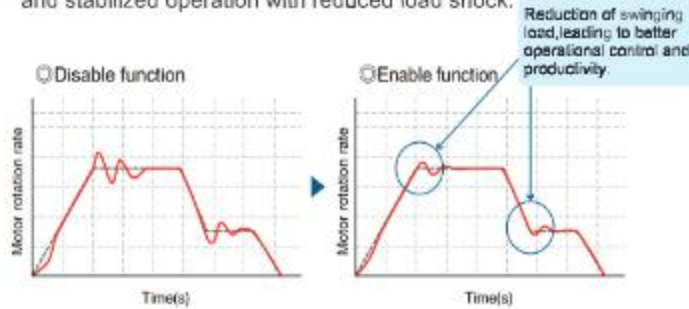
### ▶ IM/SPM Motor: Two Modes

- Select based on your needs, reduce cost.

| Rated               | LO (Light Load)       | NO (Nom at Load)             |
|---------------------|-----------------------|------------------------------|
| Induction Motor     | ←→                    |                              |
| PM Motor            | ←→                    |                              |
| Applications        | Fan Pump              | Material handling - Conveyor |
|                     | Crane-Roller          |                              |
| Overload Ability    | 120% 60sec, 150% 3sec | 150% 60sec, 200% 3sec        |
| Eg. PsH100-3800HFCD | 380.0A                | 350.5A                       |

### Gain Mapping Function

- Decreasing overshoot and undershoot contributes to smooth and stabilized operation with reduced load shock.



### Different Operators, Meet Different Needs.

- Three Different Types of Operators,



Digital operator with volume(MOP(VR))

Digital operator (MOP)

Color LCD operator(VOP)

### 400V Class Specification

| Model                         |                                | PsH100-****HFC   |      |      |      |      |      |      |      |       |          |              |                          |       |
|-------------------------------|--------------------------------|--|------|------|------|------|------|------|------|-------|----------|--------------|--------------------------|-------|
| Standard Capacity             |                                | 055  | 075  | 110  | 150  | 185  | 220  | 300  | 370  | 450   | 550      | 750          | 900                      | 1100  |
| Applicable Motor Capacity(kW) |                                | 5.5  | 7.5  | 11   | 15   | 18.5 | 22   | 30   | 37   | 45    | 55       | 75           | 90                       | 110   |
| Output                        | Rated Output Current(A)        | 14.8   | 19.0 | 25.0 | 32.0 | 39.0 | 48.0 | 61.0 | 75.0 | 91.0  | 112.0    | 150.0        | 180.0                    | 217.0 |
|                               | Overload Ability               | 150% 60sec / 200% 3sec   |      |      |      |      |      |      |      |       |          |              |                          |       |
|                               | Rated Output Voltage(V)        | Three-phase(3 wire)380 to 460V (Corresponding to supply voltage)             |      |      |      |      |      |      |      |       |          |              |                          |       |
|                               | Rated Capacity (kVA)           | 400V   | 10.3 | 13.2 | 17.3 | 22.2 | 27.0 | 33.3 | 42.3 | 52.0  | 63.0     | 77.6         | 103.9                    | 124.7 |
|                               | 460V                           | 11.8   | 15.1 | 19.9 | 25.5 | 31.1 | 38.2 | 48.6 | 59.8 | 72.5  | 89.2     | 119.5        | 143.4                    | 172.9 |
| Input                         | Rated Input Current (A) *1)    | 17.6   | 22.6 | 29.8 | 38.1 | 46.4 | 57.1 | 72.6 | 89.3 | 108.3 | 133.3    | 178.6        | 214.3                    | 258.3 |
|                               | Rated Input AC Voltage         | Main circuit power supply: Three-phase(3 wire) 380 to 460V , 50Hz/60Hz (±5%) |      |      |      |      |      |      |      |       |          |              |                          |       |
|                               | Power Supply Capacity(kVA) *2) | 13.0   | 17.2 | 22.7 | 29.0 | 35.4 | 43.5 | 55.3 | 68.0 | 82.5  | 101.6    | 136.0        | 163.2                    | 196.8 |
| Starting Torque *3)           |                                | 200% / 0.3Hz   |      |      |      |      |      |      |      |       |          | 180% / 0.3Hz |                          |       |
| Braking                       | Regenerative                   | Internal BRD circuit (external discharge resistor value)                     |      |      |      |      |      |      |      |       | Optional |              | Ext. regen. braking unit |       |
|                               | Minimum Resistance Value(Ω)    | 70   | 35   | 35   | 24   | 24   | 20   | 15   | 15   | 10    | 10       | -            | -                        | -     |
| Environment                   | Temperature                    | -10 ~ 50°C *4)   |      |      |      |      |      |      |      |       |          |              |                          |       |
|                               | Humidity                       | 20~90%RH(No condensation area)   |      |      |      |      |      |      |      |       |          |              |                          |       |
|                               | Altitude                       | Maximum 1000m(No corrosive gas or dust)                                      |      |      |      |      |      |      |      |       |          |              |                          |       |
| Protection Class              |                                | IP20 UL Open Type  |      |      |      |      |      |      |      |       |          |              |                          |       |

\*1) Rated input current refers to the value when the inverter is working in the rated output current; this value may be affected by the impedance at supply side(the change of DCL, brake, wiring, etc.)

\*2) Power supply capacity refers to the value when the inverter is working in the rated output voltage; this value may be affected by the impedance at supply side(the change of DCL, brake, wiring, etc.)

\*3) The value is specified for the Hitachi standard motor controlled by the sensorless vector control in ND rating; torque characteristics may vary depending on the control system or motor

\*4) 0~50°C Using in a derated way



## Specification

| Model                                |                                | PsH100-****HFC0*   |  |       |       |       |       |       |       |
|--------------------------------------|--------------------------------|--|--|-------|-------|-------|-------|-------|-------|
| LD Mode Rated Capacity               |                                | 3050   | 3450   | 3800  | 4250  | 4810  | 5600  | 6600  |       |
| Applicable Motor(4 Pole)Capacity(kV) | ND Mode                        | 132  | 160  | 185   | 200   | 220   | 250   | 315   |       |
|                                      | LD Mode                        | 160  | 185  | 200   | 220   | 250   | 315   | 355   |       |
| Output                               | Rated Output Current(A)        | ND Mode  | 260  | 310   | 350   | 380   | 430   | 480   | 600   |
|                                      |                                | LD Mode  | 305  | 345   | 380   | 425   | 481   | 560   | 660   |
|                                      | Overload Ability               | ND Mode  | 150% 60sec / 200% 3sec   |       |       |       |       |       |       |
|                                      |                                | LD Mode  | 120% 60sec / 150% 3sec   |       |       |       |       |       |       |
| Rated Output Voltage(V)              |                                | Three phase(3 wire) 380~480V (Corresponding to supply voltage) |  |       |       |       |       |       |       |
| Rated Capacity (kVA)                 | 400V                           | ND Mode  | 180.1  | 214.7 | 242.0 | 263.0 | 294.4 | 332.5 | 415.7 |
|                                      |                                | LD Mode  | 211.3  | 239.0 | 263.0 | 294.4 | 333.2 | 388.0 | 457.2 |
|                                      | 440V                           | ND Mode  | 198.1  | 236.2 | 266.7 | 289.6 | 327.7 | 365.8 | 457.2 |
|                                      |                                | LD Mode  | 232.4  | 262.9 | 289.6 | 323.9 | 366.6 | 426.8 | 503.0 |
| Input                                | Rated input Current(A) **)     | ND Mode  | 286.0  | 325.5 | 367.5 | 399.0 | 451.5 | 504.0 | 630.0 |
|                                      |                                | LD Mode  | 320.3  | 362.3 | 399.0 | 446.3 | 506.0 | 566.5 | 690.5 |
|                                      | Rated input AC Voltage         |  | Main circuit power supply: Three phase(3 wire) 380~480V(+10%~-15%)* 50Hz/60Hz(+5%) |       |       |       |       |       |       |
|                                      | Power Supply Capacity(kVA) **) |  | ND Mode  | 220.0 | 248.1 | 280.0 | 304.1 | 344.1 | 384.1 |
|                                      | LD Mode                        | 244.1  | 276.1  | 304.1 | 340.1 | 385.6 | 447.0 | 526.2 |       |
| DCL                                  |                                | Internal   |  |       |       |       |       |       |       |
| Starting Torque (%)                  |                                | 180%/0.3Hz   |  |       |       |       |       |       |       |
| Braking                              | Regenerative                   | External regenerative braking unit                             |  |       |       |       |       |       |       |
|                                      | Minimum Resistance Value(Ω)    | -  |  |       |       |       |       |       |       |
| Environment                          | Operating Temperature          | -10 ~ 50°C *4)   |  |       |       |       |       |       |       |
|                                      | Humidity                       | 20 ~ 80%RH(No condensation area)                               |  |       |       |       |       |       |       |
|                                      | Altitude                       | Maximum altitude 1000m (without oxidative gas or dust)         |  |       |       |       |       |       |       |
| Protection Class                     |                                | IP00   |  |       |       |       |       |       |       |

\*1)Rated input current refers to the value when the inverter is working in the rated output current; this value may be affected by the impedance at supply side(the change of DCL, break, wiring, etc.)

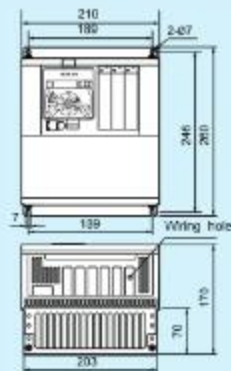
\*2)Power supply capacity refers to the value when the inverter is working in the rated output voltage; this value may be affected by the impedance at supply side(the change of DCL, break, wiring, etc.)

\*3)The value is specified for the Hiachi standard motor controlled by the sensorless vector control; in ND rating, torque characteristics may vary depending on the control system or motor.

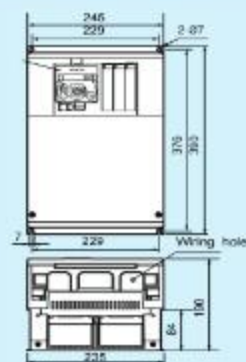
\*4)-10 ~ 50 °C: Using in a de-rated way

## Outlook & Dimensions

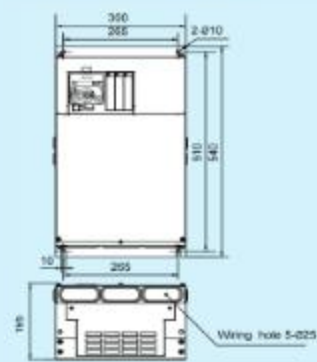
PsH100-0148~0250HFC



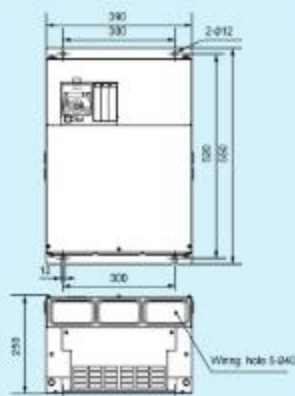
PsH100-0320~0480HFC



PsH100-0610~0750HFC



PsH100-0910~1500HFC



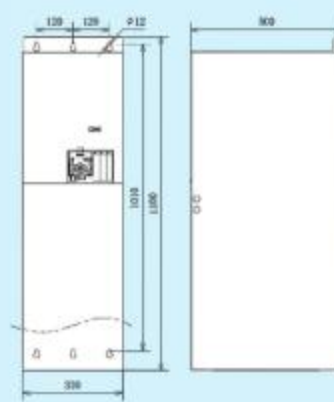
PsH100-1800~2170HFC



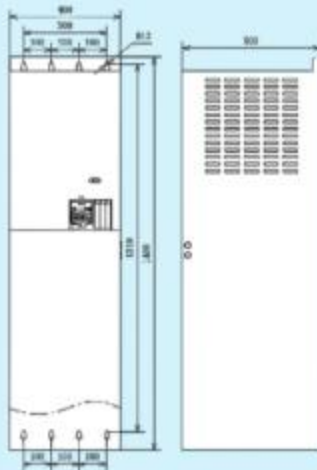
PsH100-3050~3800HFCD



PsH100-4250~4810HFCD



PsH100-5600~6600HFCD



# HITACHI

Inspire the Next

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