

Details of Features

1. Easy to Handle, East to Use

High-functionality Real-Time Auto-Gain Tuning (Note 1)

- Offers real automatic gain tuning to low and high stiffness machines with a combination of an adaptive filter.
- Supports the vertical axis application where the load torque is different in rotational direction.

DIN-rail mounting unit (option)

- DIN-rail mounting unit allows parallel mounting with small control devices such as PLC.
- Easy to mount and easy to dismount.

2. Further Reduction of Vibration

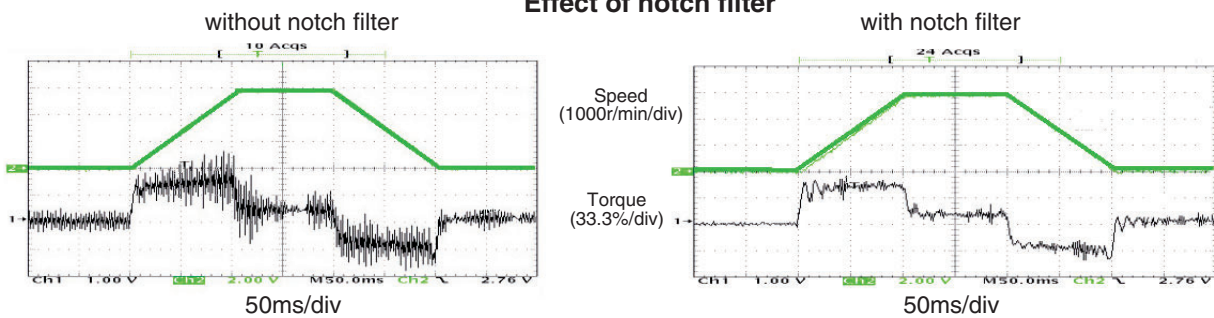
Adaptive filter (Note1)

- Makes the notch filter frequency automatically follow the machine resonance frequency in real-time auto-gain tuning.
- Suppression of "Judder" noise of the machine can be expected which is caused by variation of the machines or resonance frequency due to aging.

Notch filter (Note1)

- 1-channel notch filters are equipped in the driver independent from adaptive filter.
- Each of 2 filters can set up frequency and notch width, and frequency in 1Hz unit. Suppression of "Judder" noise of the machine which has multiple resonance points can be expected.

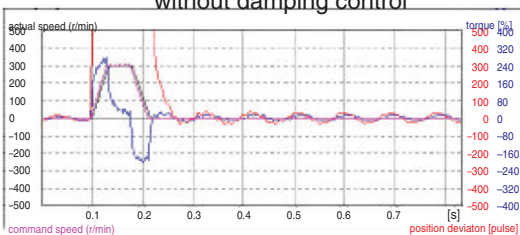
Effect of notch filter



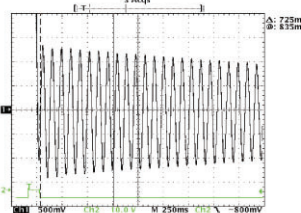
Damping control (Note1)

- You can suppress vibration occurring at both starting and stopping in low stiffness machine, by manually setting up vibration frequency in 0.1Hz unit. Note) Only applies to manual adjustment

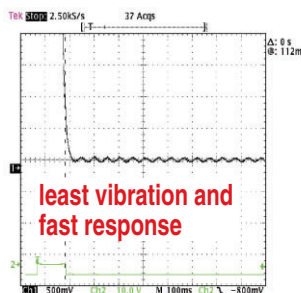
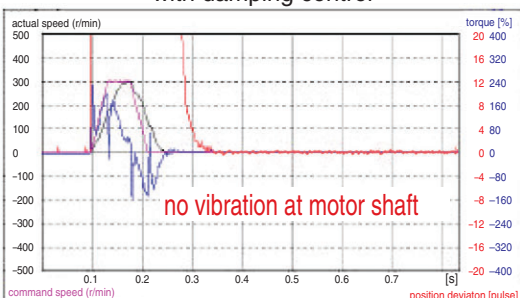
Motor movement without damping control



Machine movement



with damping control



(Note1)

- Select at positioning action mode.
- At high speed positioning mode (Pr02=0) Select either one of notch filter, damping control or high-functionality real-time auto-gain tuning. Not possible to use them all at the same time. Adaptive filter cannot be used.
- At high-functionality positioning mode (Pr02=1) All of notch filter, damping control, high-functionality real-time auto-gain tuning and adaptive filter can be used at the same time.

3. Further Flexibility and Multiplicity

Console (Option)

- You can set up parameters, copy and make a JOG run.
- Convenient for maintenance at site.
- Refer to Page E25, Options.

Command control modes

- Offers 2 command modes, "Position control" and "Internal velocity control".
- You can make a 4-speed running at preset values with parameter at internal velocity control.

Inrush current suppressing function

- Inrush suppressing resistor is equipped in this driver, which prevent the circuit breaker shutdown of the power supply caused by inrush current at power-on.
- Prevents unintentional shutdown of the power supply circuit breaker in multi axis application and does not give load to the power line.

Regeneration discharging function

- Discharges the regenerative energy with resistor, which energy is generated while stopping the load with large moment of inertia, or use in up-down operation, and is returned to the driver from the motor.
- No regenerative resistor is installed in the driver.
- It is highly recommended to install an external regenerative resistor (option).

Built-in dynamic brake

- You can select the dynamic brake action which short the servo motor windings of U, V and W, at Servo-OFF, CW/CCW over-travel inhibition, power shutdown and trip.
- You can select the action sequence set up depending on the machine requirement.

Setup support software

- With the setup support software, "PANATERM" via RS232 / RS485 communication port, you can monitor the running status of the driver and set up parameters.
Note) Refer to page, F2 for setup support software.

Key-way shaft and tapped shaft end

- East pulley attachment and easy maintenance
- Attache screw to the tapped shaft to prevent key or pulley from being pulled out.

Wave-form graphic function

- With the setup support software, "PANATERM", you can monitor the "Command speed", "Actual speed", "Torque", "Position deviation" and "Positioning complete signal".
- Helps you to analyze the machine and shorten the setup time
*Note) Refer to page "F2" for setup support software.

Frequency analyzing function

- You can confirm the response frequency characteristics of total machine mechanism including the servo motor with the setup support software, "PANATERM".
- Helps you to analyze the machine and shorten the setup time.
*Note) Refer to page "F2" for setup support software.

Torque limit switching function

- You can select 2 preset torque limit value from external input.
- Use this function for tension control or press-hold control.

Conformity to CE and UL Standards



Subject	Standard conformed				
Motor	IEC60034-1	IEC60034-5	UL1004	CSA22.2 No.100	Conforms to Low-Voltage Directives
	EN50178	UL508C	CSA22.2 No.14		
Motor and driver	EN55011	Radio Disturbance Characteristics of Industrial, Scientific and Medical (ISM) Radio-Frequency Equipment			Conforms to references by EMC Directives
	EN61000-6-2	Immunity for Industrial Environments			
	IEC61000-4-2	Electrostatic Discharge Immunity Test			
	IEC61000-4-3	Radio Frequency Electromagnetic Field Immunity Test			
	IEC61000-4-4	Electric High-Speed Transition Phenomenon/Burst Immunity Test			
	IEC61000-4-5	Lightening Surge Immunity Test			
	IEC61000-4-6	High Frequency Conduction Immunity Test			
	IEC61000-4-11	Instantaneous Outage Immunity Test			

IEC : International Electrotechnical Commission
 EN : Europaischen Normen
 EMC : Electromagnetic Compatibility
 UL : Underwriters Laboratories
 CSA : Canadian Standards Association

Pursuant to at the directive 2004/108/EC, article 9(2)

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