ADVA

■ Specifications for ADVA

■ Applicable model numbers
NT series: NT55V, NT80V, NT...XZ, NT...XZH
SA series: all model numbers
LT series: all model numbers
● In addition to the conventional pulse train command input, high speed motion network EtherCAT is also supported.
● 10 input terminals, 6 output terminals, and analog input (0 to ±10 V) can be controlled by intelligent terminals.
● The high controllability shortens the settling time, realizing further improvement of productivity.
● Machine diagnosis, startup and adjustment of linear motor can be easily performed thanks to parameter settings, monitor display, operation trace and automatic tuning function of the setup software.
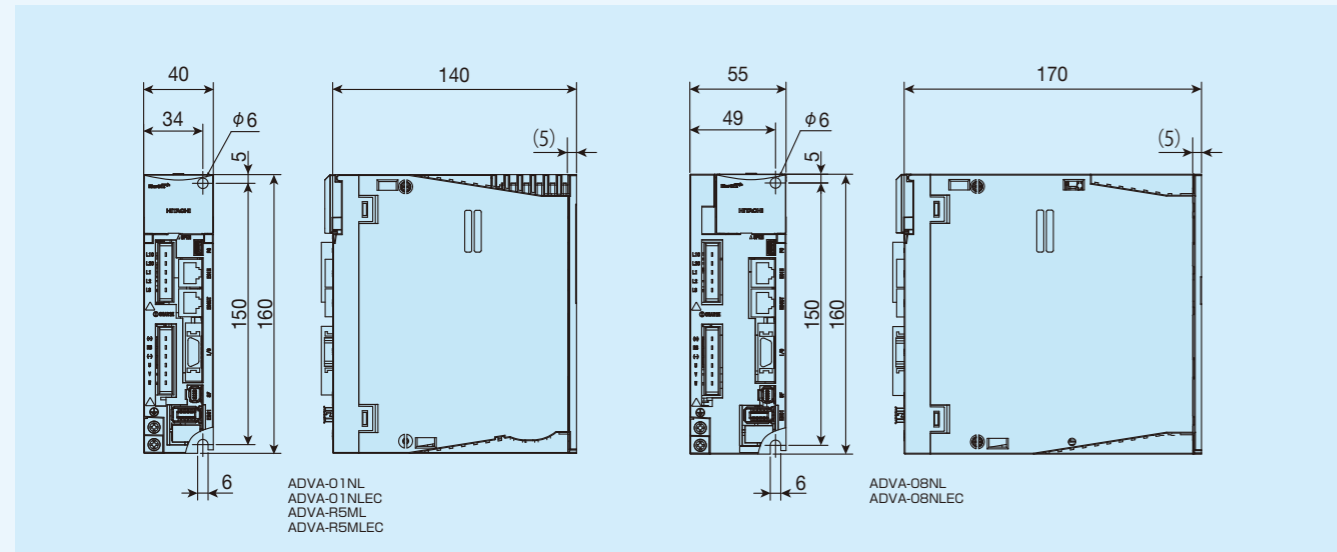

ADVA-O1NL
ADVA-O1NLEC
ADVA-R5ML
ADVA-R5MLEC

ADVA-08NL
ADVA-08NLEC

● Setup software

● Used for setting, referencing, changing, printing and saving driver parameters.
● Allows for real-time monitoring of operational status and output status.
● Indicates speed and current, etc. on charts.
● Supports commissioning and gain tuning.

Table 4 Operating environment of the setup software

Item	Operating conditions
PC	CPU: Pentium 4 1.8 GHz or higher HDD free space: 1 GB or more Display resolution: 1024x768 or higher recommended
OS	Windows Vista 32-bit SP1 Windows 7 (32-bit, 64-bit) Windows 8 (32-bit, 64-bit)

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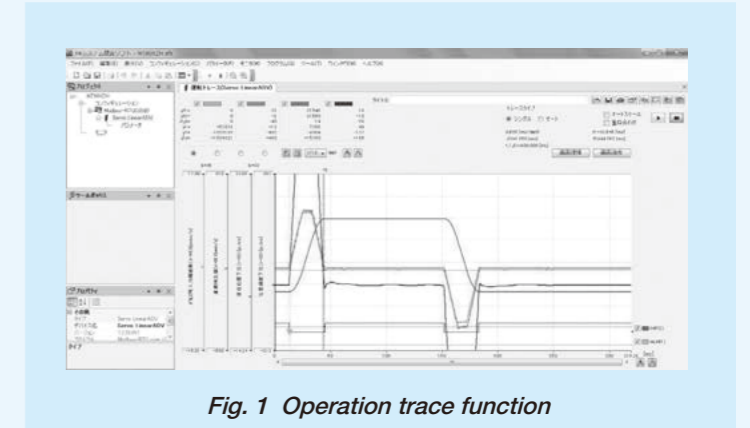

Fig. 1 Operation trace function

Table 3 Specifications for ADVA

Item		Identification number	ADVA-01NL ADVA-01NLEC	ADVA-08NL ADVA-08NLEC	ADVA-R5ML ADVA-R5MLEC
Basic specification	Input power		Single-phase / Three-phase AC 200 to 230 V 50 / 60Hz		Single-phase AC100 to 115V 50 / 60Hz
	Rated current / momentary current		1.2Arms / 3.6Arms	5.1Arms / 15.3Arms	1.2Arms / 3.6Arms
	Power plant capacity		0.3kVA	1.3kVA	0.3kVA
	Protective structure (¹)		Semi-enclosed IP20		
Input/Output relation function	Control mode		Position control / Speed control / Thrust force control		
	Speed command		Analog input: 0 to ±10 V / Maximum speed (gain configurable)　or　EtherCAT		
	Thrust force command		Analog input: 0 to ±10 V / Maximum thrust force (gain configurable)　or　EtherCAT		
	Position command		Line driver signal: 20 Mpps (non-isolated input / after 4-time multiplication) Open collector signal: 2 Mpps (isolated input / after 4-time multiplication)　or　EtherCAT		
	Contact input / output		[Input] Intelligent terminal selects 10 input terminal (6 input terminal for EtherCAT specification) function by parameter DC12 / 24 V Contact signal / Open collector signal input (with internal DC24 V power supply) [Output] Intelligent terminal selects 6 output terminal (4 output terminal for EtherCAT specification) function by parameter (Open collector signal output: sink output)		
Internal function	Built-in operator		Pulse train command specification: Five digit numeric display, five key push button / DIP switch (Modbus communication setting) EtherCAT specification: 2-digit numeric display, DIP switch (node address setting for EtherCAT)		
	External operator		Windows 7/8 (32-bit, 64-bit) PC can be connected (USB 2.0 full speed)		
	Regenerative braking circuit		Built-in		
	Dynamic brake (²)		Built-in (motion condition configurable)		
	Protective function		Overcurrent, overload, braking resistor overload, main circuit overvoltage, memory error, main circuit under voltage, CT failure, CPU error 1, external trip (motor temperature error), servo ON ground detection, control circuit under voltage, servo amplifier temperature error, drive prohibition error, power module failure, safety circuit failure, emergency shutdown, encoder failure, mismatch error, power reactivation request, magnetic pole position estimation error, magnetic pole position estimation not executed, position deviation error, speed deviation error, overspeed error, momentary power failure, main circuit power supply failure, drive range error (network communication error, DC synchronization error, under voltage display)		
Operating environment	Ambient temperature in operation/ Storage temperature (³)		0 ～ 55℃ / −10 ～ 70℃		
	Operating humidity		20 to 90% RH (keep condensation free)		
	Vibration resistance (⁴)		5.9m/s² (0.6G) 10 to 55Hz		
	Service space		Altitude of 1000 m or below, indoor (no corrosive gas and dust)		
	Mass		0.7kg	1.2kg	0.7kg

Notes(¹)　Protection method is compliant with JEM1030.
　　(²)　Use the dynamic brake for emergency stop.
　　(³)　The storage temperature is the temperature during transportation.
　　(⁴)　Compliant with JIS C60068-2-6:2010.

● Automatic tuning function

By using the automatic tuning function of the setup software for ADVA, non-expert users can easily perform high-accuracy gain adjustment.
<Operating conditions>
Main body: NT55V25/05R + ADVA-01NL/NT55V25
Carrying mass: 200g   Speed: 500mm/s   Positioning complete width: $\pm 5\mu m$ Traveling distance: 10mm
Acceleration/deceleration time: 12ms
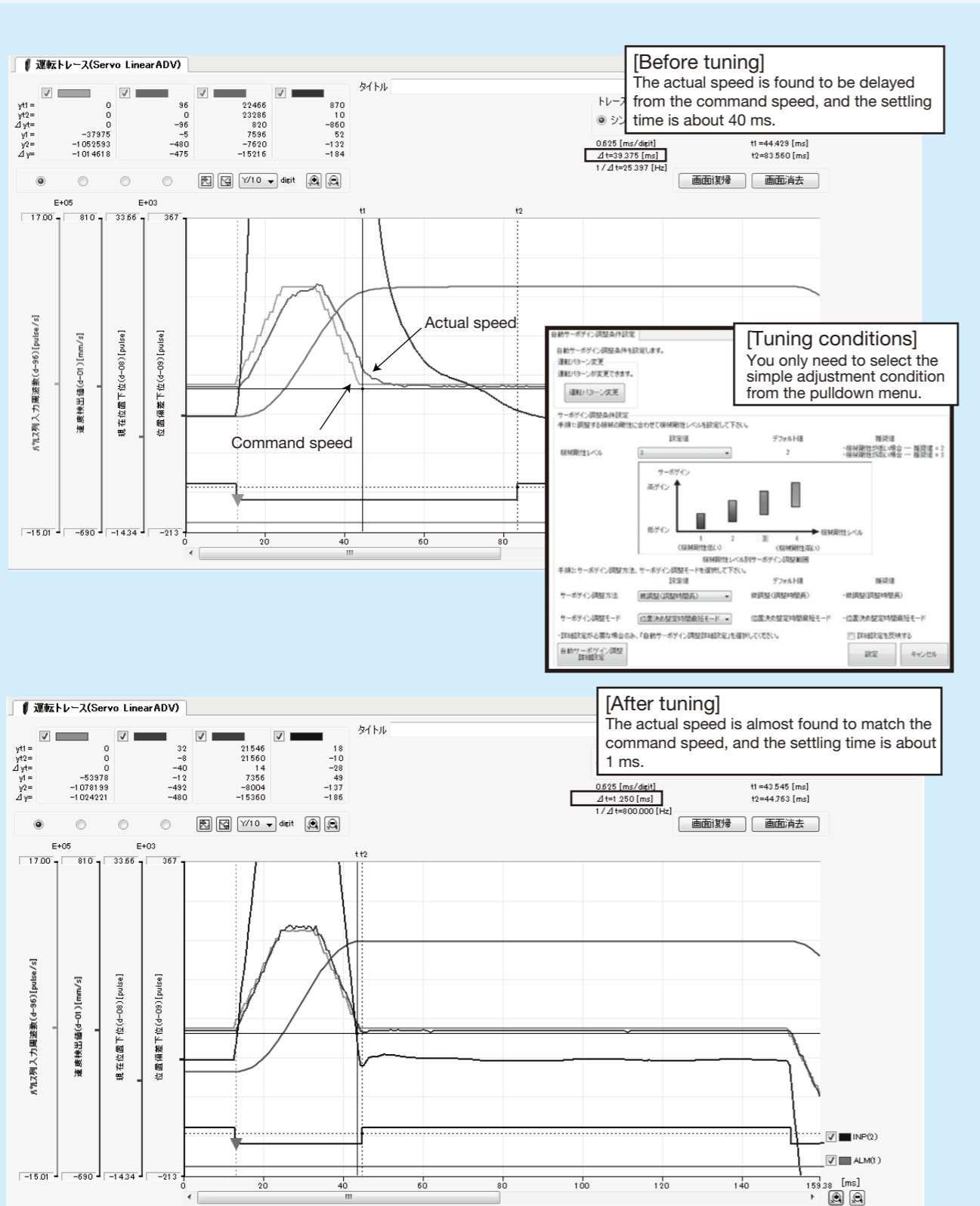

[Before tuning]
The actual speed is found to be delayed from the command speed, and the settling time is about 40 ms.

[Tuning conditions]
You only need to select the simple adjustment condition from the pulldown menu.

[After tuning]
The actual speed is almost found to match the command speed, and the settling time is about 1 ms.

Fig. 2 Automatic tuning

MR-J4

■ Specifications for MR-J4

■ Applicable model numbers
NT series: NT55V, NT80V
SA series: all model numbers

● Supports SSCNET Ⅲ/H (high-speed serial bus). Higher speed and accuracy are realized by optical communication system.
● Servo gain adjustment, including machine resonance suppression filter, advanced vibration control II, and robust filter, can be completed simply by turning on the one-touch tuning function. Easy driving of the cutting-edge vibration suppression function allows the machine to produce its best performance.
● Machine diagnosis, startup and adjustment of linear motor can be easily performed thanks to parameter settings, monitor display and machine analyzer of the setup software (MR Configurator2).
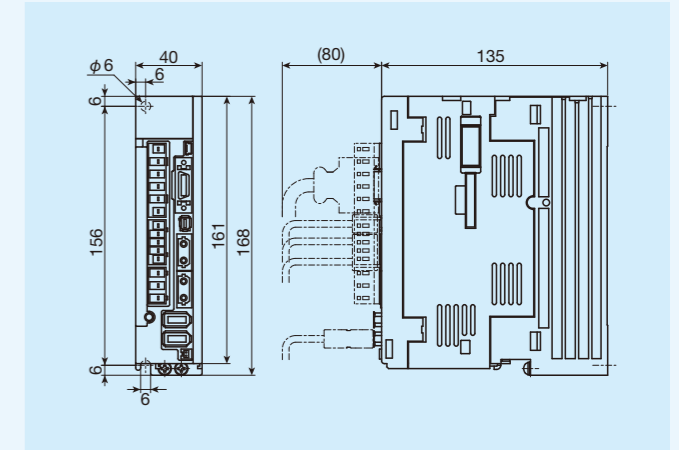

Table 5 Specifications for MR-J4

Item	Identification Number		MR-J4-10B-RJ
Basic specification	Output	Rated voltage	Three-phase AC170V
		Rated current	1.1A
	Main circuit power supply	Voltage / Frequency	Single-phase / Three-phase AC200-240V 50/60Hz
		Allowable power fluctuation	Single-phase / Three-phase AC170-264V
		Allowable frequency fluctuation	Within ± 5%
	Control circuit power supply	Voltage / Frequency	Single-phase AC200-240V 50/60Hz
		Allowable power fluctuation	Single-phase AC170-264V
		Allowable frequency fluctuation	Within ± 5%
		Power consumption	30W
	Power supply for interface		DC24V ± 10% (required current capacity: 0.3A (includes CN8 connector signal))
	Structure (protection class)		Natural air cooling and opening (IP20)
	Control method		Sine wave PWM control/current control method
	Machine end encoder interface		Mitsubishi high-speed serial communication / ABZ-phase differential input signal
Input/Output function	Encoder output pulse		Supported (ABZ-phase pulse)
	Analog monitor		2ch
	Communication function		USB: connection with personal computer, etc. (MR Configurator2 supported)
Internal function	Dynamic brake		Built-in
	Protective function		Overcurrent interrupt, regeneration overvoltage interrupt, overloading interrupt (electric thermal), servomotor overheat protection, encoder error protection, regeneration error protection, undervoltage protection, momentary power failure protection, overspeed protection, excessive error protection, magnetic pole detection protection, linear servo control error protection
Operating environment	Ambient temperature		0 to 55° C (keep freeze free), Storage: 20 to 65° C (keep freeze free)
	Ambient humidity		90%RH or lower (keep condensation free), Storage: 90%RH or lower (keep condensation free)
	Atmosphere		Indoor (no exposure to direct sun light), must be free from corrosive gas, flammable gas, oil mist and dust
	Altitude		1 000m or lower
	Vibration resistance		5.9m/s^2 or less, 10Hz to 55Hz (X, Y, Z directions)
Mass			0.8kg