

Panasonic

EtherCAT for open communication

AC servo drives MINAS A5B series



Highlights

- Communication with the real-time Ethernet bus
- 20-bit encoder resolution
- Rated power range 50W – 15000W
- Safety function STO according to EN61800-5-2
- Real-time auto-gain tuning

Ether**CAT** 

MINAS A5B series

The MINAS A5B series with an EtherCAT interface offers the tried and true range of functions of the A5N series. In addition, it offers the advantage of open communication with EtherCAT motion controllers.

Highlights:

- Real-time communication: 100Mbps via CAN application protocol over EtherCAT (CoE)
- Supports positions (pp, csp, hm), velocity (pv, csv), torque control (tq, cst) and safety standards just like MINAS A5
- Manual and automatic damping filters
- Complete set of commands for up to 65.535 axes per network
- Easy wiring using standard Ethernet cables (CAT5e, up to 100m between units)

Legend, stock type:

- A = products normally in stock
- B = products partially in stock
- C = no stock



Product no.	MINAS A5B (EtherCAT) with EtherCAT interface		Stock type
MADHT1505BA1	50/100W	1/3-phase 230V AC	A
MADHT1507BA1	200W	1/3-phase 230V AC	A
MBDHT2510BA1	400W	1/3-phase 230V AC	A
MCDHT3520BA1	750W	1/3-phase 230V AC	A
MDDHT2412BA1	1000W	3-phase 400V AC	C
MEDHT4430BA1	2000W	3-phase 400V AC	C
MFDHT5440BA1	3000W	3-phase 400V AC	C
MFDHTA464BA1	5000W	3-phase 400V AC	C
On request	> 5kW	3-phase 400V AC	

Product no.	MINAS A5B (EtherCAT) with safety function STO		Stock type
MADHT1505B01	50/100W	1/3-phase 230V AC	C
MADHT1507B01	200W	1/3-phase 230V AC	C
MBDHT2510B01	400W	1/3-phase 230V AC	C
MCDHT3520B01	750W	1/3-phase 230V AC	C
MDDHT2412B01	1000W	3-phase 400V AC	C
MEDHT4430B01	2000W	3-phase 400V AC	C
MFDHT5440B01	3000W	3-phase 400V AC	C
MFDHTA464B01	5000W	3-phase 400V AC	C
On request	> 5kW	3-phase 400V AC	

Applications

Packaging machine



X-Y table





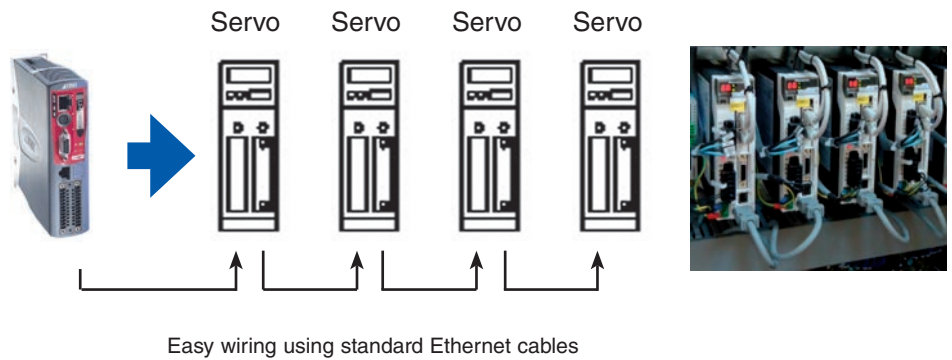
Example EtherCAT Master

Combine the MC4N-Mini EtherCAT Master from TRIO with Panasonic's servo drives. The high-performance motion controller for complex applications offers highly dynamic and compact servo technology. Ideal for machines with multiple axes or robot applications.

Highlights:

- Up to 32 axes EtherCAT digital drive (also for 2, 4, 8, 16 axes)
- Up to 1024 EtherCAT I/Os
- Linear, circular, and spiral interpolation
- 532MHz ARM 11 processor
- SD memory card slot
- Ethernet ports: Ethernet-IP / Modbus TCP / Trio ActiveX / Uniplay HMI / UDP

Product no.	MC4N Motion Coordinator, EtherCAT Master
P900	2 axes
P901	4 axes
P902	8 axes
P903	16 axes
P904	32 axes



Cutting machine



Food processing machine



Special features

Real-time auto-gain tuning

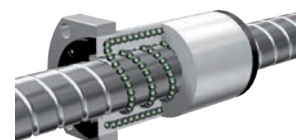
If this function is activated, tuning is performed automatically upon completion of several operations. When the response frequency has been adjusted, simple tuning results in a change to a single parameter value. Fine-tuning can be carried out by activating the gain adjustment mode in the setup software. The automatic vibration suppression function minimizes damage to the equipment. Additional mode and stiffness parameters enable easy response frequency optimization for specific machine types such as vertical axis or high-friction, belt-driven machines.

Belt drive



Autotuning approx. 12ms

Vertical axis

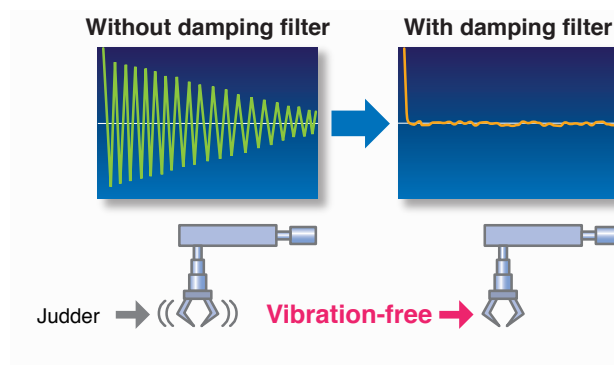


Autotuning <2ms

Manual and automatic damping filters

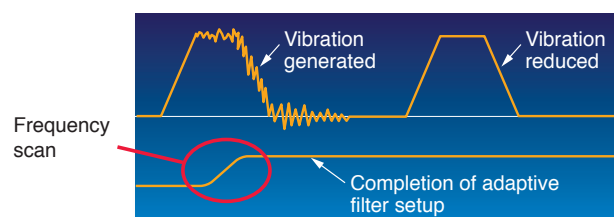
Damping filters that can be set automatically suppress the equipment's resonance and the natural vibration frequency component of the command input, which greatly reduces axis vibration at machine stoppage. The number of damping filters has been increased to four from the conventional two; of these four, two are for simultaneous use.

The available frequency range has been extended significantly from 1 to 200Hz.



Manual and automatic notch filters

Highly sensitive notch filters eliminate the need to monitor troublesome vibration frequencies. By automatically detecting vibration and defining a simple auto-gain setting, the MINAS A5B's filters greatly reduce interference and vibration caused by equipment resonance. For depth adjustment, the MINAS A5B features a total of four notch filters, two of which share the auto setup. The setup frequency range for the filters is 50 – 5000Hz.



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