

DYNASERVO

Reliable, Affordable and High Performance

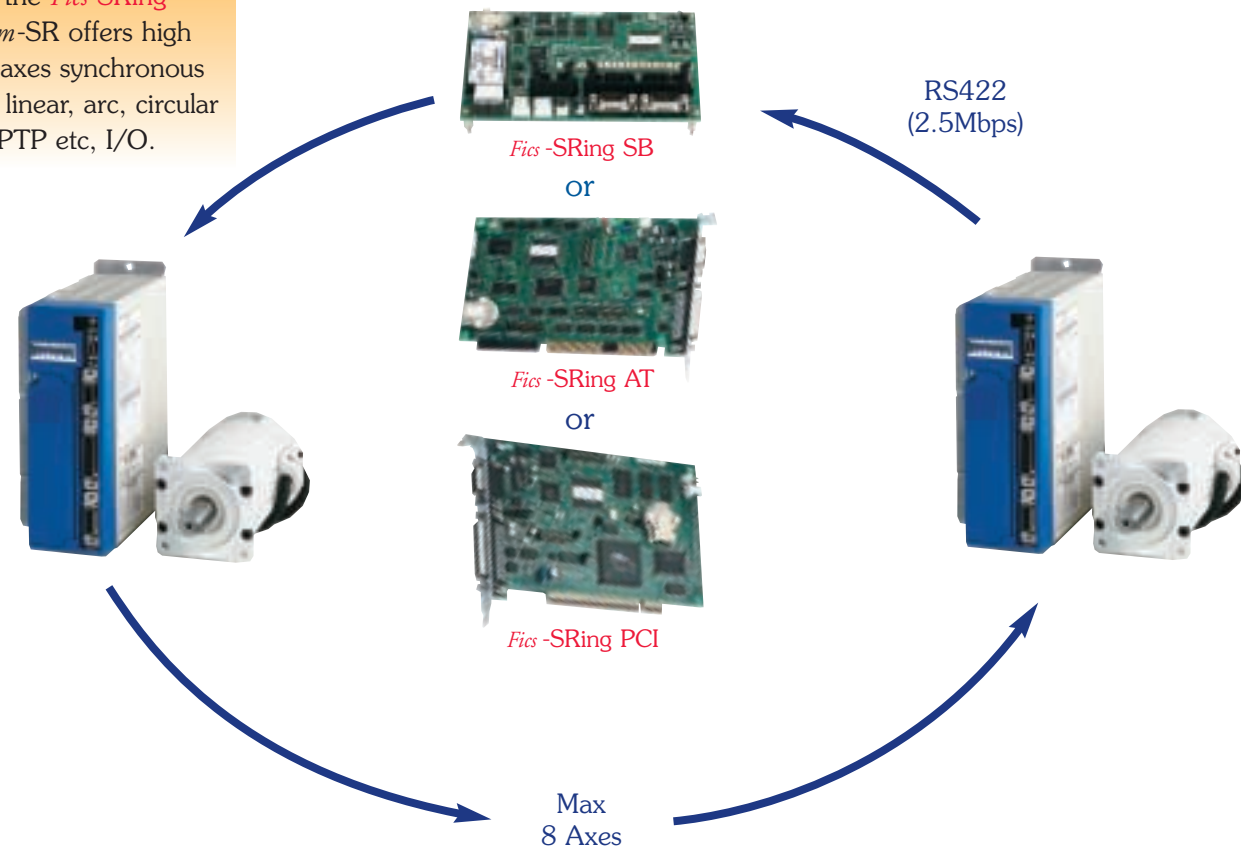


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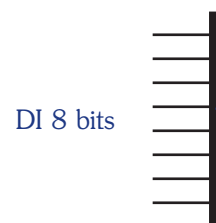
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Integrated with the *Fics-SRing* controllers, *Atom-SR* offers high precision multi-axes synchronous control such as linear, arc, circular interpolations, PTP etc, I/O.



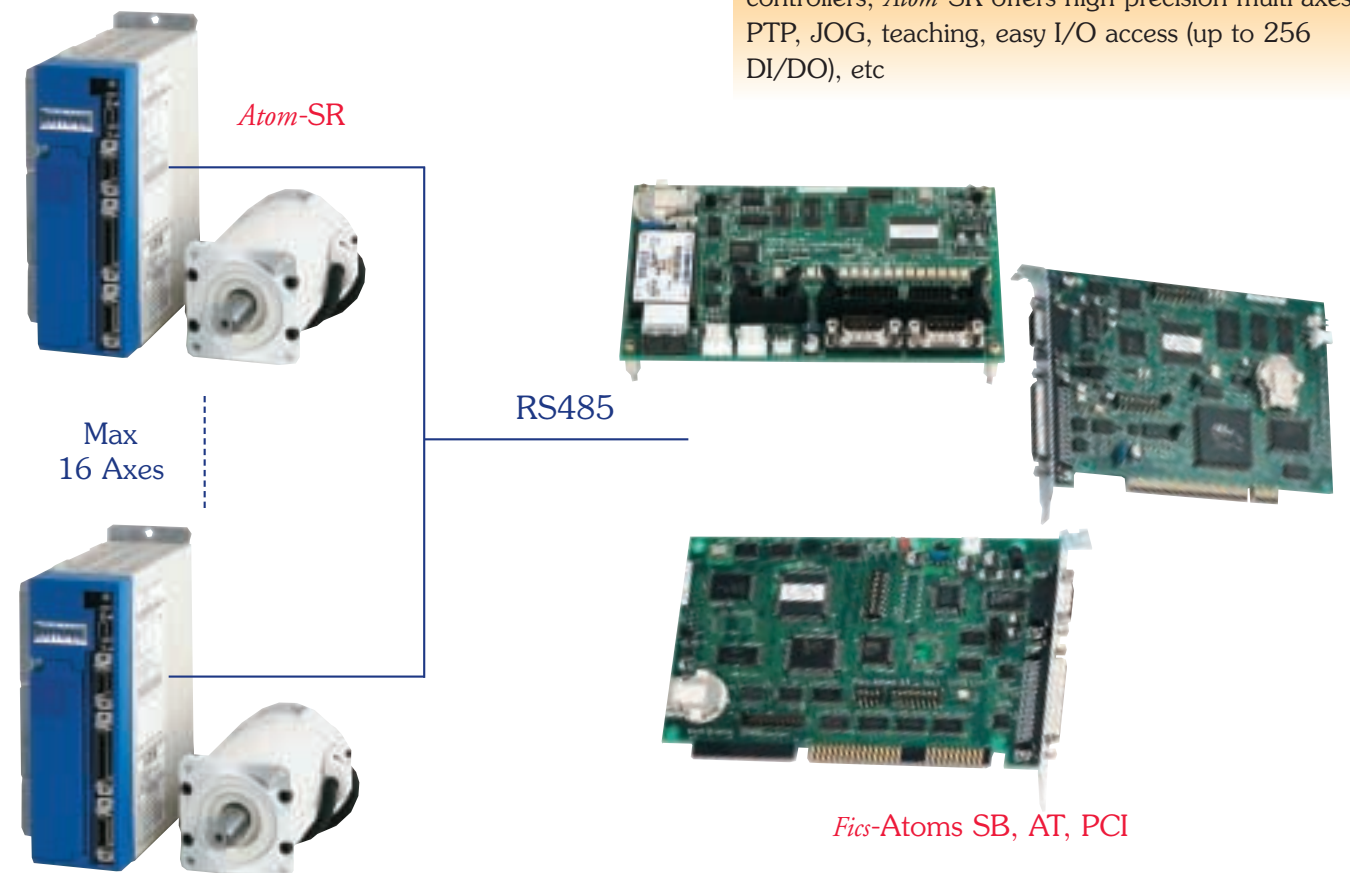
Operational as standalone, 256 points of absolute position and 8 points of relative position can be pre-set, and these positions are directly indexed by either 8 bits digital inputs, *Fics-RT1*, or communicating with PC via RS-232C.



Atom-SR A Multi-Function AC Servo Driver with High-Speed Serial Communications

Atom-SR is a series of digital AC servo drivers with high-speed serial communication control which can be connected to the *Fics* serial controllers (SB,AT,PCI type) controllers, or be configured to run as standalone. It communicates with *Fics-Atoms* or LMC controllers via RS485 at a speed of 625kbps, or with the *Fics-SRing* controllers via RS422 at a speed as high as 2.5Mbps.

Integrated with the *Fics-Atoms* (or LMC) series controllers, *Atom-SR* offers high precision multi-axes PTP, JOG, teaching, easy I/O access (up to 256 DI/DO), etc



- Fully digital control
- High accuracy servo
- 11 bits DI (3 bits for homing, +limit, -limit sensors) on-board
- 2500 P/r INC and 17 bits ABS encoders supported
- Brake option available
- Trapezoidal or smooth S-curve profile
- Less wiring and compact
- Easy setting of parameters with *Fics-RT1* or *Fics-SoftRT1*
- Motor position monitoring function
- Conformity to **UL** and **cUL** safety standards
- Low cost and high performance

Applications:

- Semiconductor Processing Devices
- Coil Winding Machines
- Electronic Component Assembly
- Industrial Robots
- Packaging Machines
- Cut-to-Length Machines
- Material Handling Machines
- Other Automated Machines and Equipment

Drive Specifications:

| | | | |
|----------------------------|---------------------------------|--|--|
| Basic specifications | Power supply | 100V | 1-Phase 100~115 ^{+10%} _{-15%} , 50/60Hz |
| | | 200V | 3-Phase 200~230V ^{+10%} _{-15%} , 50/60Hz |
| | Control method | | Transistor PWM Method(Sine Wave) |
| | Feedback | | Incremental encoder(2500P/r standard, less wiring type) |
| Ambient working conditions | Temperature | Working temperature 0~50°C Storage temperature -20~80°C | |
| | Humidity | Working and storage humidity less than 90%RH (free from dew) | |
| | Vibration | Less than 4.9m/s ² (0.5G), 10~60Hz (cannot be operated continuously at resonance point) | |
| Function | Regenerative discharge resistor | | Built-in/external (depends on the driver type) |
| | Dynamic brake | | Active ① When servo OFF ② When alarm occurred ③ When power OFF |
| | Protective functions | Hardware error | Over-voltage(OV) •Under-voltage(LV) •Over-load(OL) •Over-speed(OS) Over-current(OC) •Encoder abnormal(ST)protections |
| | LED display | | Z-Phase signal •Servo alarm(ALARM) •Servo ready(SRDY) |
| Applicable load inertia | | | Less than 30 times(400W), or 20 times(750w)of motor inertia |

Wide Selection of Applicable Motors:

DYNAX AC servo motors MINAS series (OEM manufactured by Panasonic): 30W, 50W, 100W, 200W, 400W, 750W, 1kW, 2kW, 3kW, 5kW (100/200V, Single/3-Phase) and Yaskawa Sigma series motors are supported as standard. Some of these are listed below.

| Maker-Motor type | x0 | x1 | x2 | x3 | x4 | x5 | x7 | x8 | x9 | | |
|------------------|----|------|---------|---------|---------|---------|---------|---------|---------|----------|---------------------------------------|
| MINAS 1 | x0 | | MSM3AZA | MSM5AZA | MSM011A | MSM021A | MSM041A | MSM3ACA | MSM5ACA | MSM8ABA | Not exceeding 100V (200V)(*2:1000P/R) |
| MINAS 2 | x1 | | MSM3AZA | MSM5AZA | MSM012A | MSM022A | MSM042A | MSM082A | | MFA020*2 | |
| Σ100V | x2 | | SGMA3B | SGMA5B | SGM01B | SGM02B | | R50W | R100W | | (100V) |
| Σ200V | x3 | R50W | SGMA3A | SGMA5A | SGM01A | SGM02A | SGM04A | SGM08A | R100W | R200W | (200V) |

Other vendor's AC servo motors may be connected to Atom-SR after adjusting the drivers' internal parameters. For details, contact our sales office.

I/O Connector

[IO] 10236-52A2JL(SUMITOMO 3M)

| PIN | Signal name | I/O | PIN | Signal name | I/O |
|-----|-------------|-----|-----|-------------|-----|
| 1 | +24V | IN | 19 | DI1 | IN |
| 2 | +24V | IN | 20 | DI2 | IN |
| 3 | +OV | IN | 21 | DI3 | IN |
| 4 | -OV | IN | 22 | DI4 | IN |
| 5 | ORG | IN | 23 | DI5 | IN |
| 6 | EMERGENCY | IN | 24 | DI6 | IN |
| 7 | START | IN | 25 | DI7 | IN |
| 8 | RESET | IN | 26 | DI8 | IN |
| 9 | SERVO ON | IN | 27 | SERVO READY | OUT |
| 10 | POINT INPUT | IN | 28 | READY | OUT |
| 11 | +MOVE | IN | 29 | STOP | OUT |
| 12 | -MOVE | IN | 30 | ALARM | OUT |
| 13 | SPEED | IN | 31 | DO1 | OUT |
| 14 | ANALOG IN1 | IN | 32 | DO2 | OUT |
| 15 | ANALOG IN2 | IN | 33 | DO3 | OUT |
| 16 | ANALOG GND | - | 34 | DO4 | OUT |
| 17 | ANALOG OUT1 | OUT | 35 | 24V GND | - |
| 18 | ANALOG GND | - | 36 | 24V GND | - |

Encoder connector

[ENC] 10220-52A2JL(SUMITOMO 3M)

| PIN | Signal name | I/O | PIN | Signal name | I/O |
|-----|-------------|-----|-----|-------------|-----|
| 1 | GND | - | 11 | Z+ | IN |
| 2 | GND | - | 12 | Z- | IN |
| 3 | +5V | OUT | 13 | V+ | IN |
| 4 | +5V | OUT | 14 | V- | IN |
| 5 | Reserved | - | 15 | W+ | IN |
| 6 | Reserved | - | 16 | W- | IN |
| 7 | A+ | IN | 17 | U(RX)+ | IN |
| 8 | A- | IN | 18 | U(RX)- | IN |
| 9 | B+ | IN | 19 | NC | - |
| 10 | B- | IN | 20 | FG | - |

Monitor and serial communication connector

[DSS] 10214-52A2JL(SUMITOMO 3M)

| PIN | Signal name | I/O | PIN | Signal name | I/O |
|-----|--------------|-----|-----|-------------|-----|
| 1 | SR RD+ | IN | 8 | SR SD+ | OUT |
| 2 | SR RD- | IN | 9 | SR SD- | OUT |
| 3 | SR/485 GND | - | 10 | SR GND | - |
| 4 | 485+ | I/O | 11 | ENC A+ | OUT |
| 5 | 485- | I/O | 12 | ENC A- | OUT |
| 6 | 485TERMINAL+ | IN | 13 | ENC B+ | OUT |
| 7 | 485TERMINAL- | IN | 14 | ENC B- | OUT |

Main power & motor terminal block TBI

| Terminal No. | Name | Description |
|--------------|------|---|
| 1 | R | Main power input |
| 2 | S | |
| 3 | (T) | |
| 4 | P | Regenerative discharge resistor (must be installed for bigger than 750W motors) |
| 5 | B | |
| 6 | U | U-Phase terminal |
| 7 | V | V-Phase terminal |
| 8 | W | W-Phase terminal |
| 9 | E | Frame earth (for electric noise rejection) |

Fics-RT1(RS232C) connector

[COM] DHFRAA101(DDK)

| PIN | Signal name | I/O | PIN | Signal name | I/O |
|-----|-------------|-----|-----|-------------|-----|
| 1 | GND | - | 6 | DSR | I |
| 2 | RXD | I | 7 | D/A(IM) | O |
| 3 | TXD | O | 8 | D/A(SPM) | O |
| 4 | DTR | O | 9 | +5V | O |
| 5 | GND | - | 10 | GND | - |

Attachments None

Note: Connectors may be replaced by their equivalents.