

# DYNASERVO

*Reliable, Affordable and High Performance*



## **Fics Serial Controller AT Ver.2** **ISA Bus Motion Controller with Serial Communications**

*Fics serial controller AT* is an intelligent motion controller especially designed for PC-based application. It can be installed with either **Fics-III** or **Ladder motion** languages and communicates with DYNASERVO servo drivers via RS485 at 625Kbps or RS422 at 2.5Mbps. Depending on the pre-installed software and the communication interface, *Fics* serial controller SB is classified as

**Fics-Atoms AT Ver.3:** *Fics* serial controller with *Fics-III* and RS485 communication

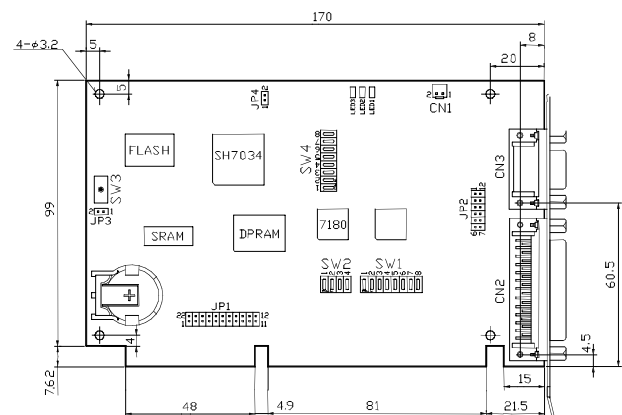
**Fics-SRing AT Ver.3:** *Fics* serial controller with *Fics-III* and RS422 communication

**LMC AT Ver.3:** *Fics* serial controller with Ladder Motion and RS485 communication

The on-board Dual Port RAM (DPRAM) and the supporting software *Fics*BIOS and HOST option make it easy for the communication between host CPU and servo drivers.

### FEATURES

- Advanced motion control software
  - Multi-axis linear interpolation (*Fics-Atoms*)
  - 3-D linear and 2-D arc & circular interpolations (*Fics-SRing*)
  - High precision PTP control
  - Easy manual operation and programming with *Fics-RT1* or PC
  - BASIC-like or Ladder Motion programming
  - Trapezoidal and S-curve velocity profiles
  - Multi-tasking (8 tasks)
  - 96 variables & 96 system, flag, monitor variables
  - Pallet & matrix functions
- Capable of controlling motion with up to 16 axes (*Fics-Atoms*) or 8 axes (*Fics-SRing*) with mixed AC servo/stepper motors
- Serial network digital input/output expansion. (Max 256 bits DI or 256 bits DO).
- Run as standalone if supplied with +5V
- Minimal wiring, low cost and high performance



# Fics serial Controller AT Ver.2

## Technical Data

- Power Supply: +5V  $\pm$ 5%  
(need only when used as stand-alone)
- Current Consumption: 0.5A
- Bus Interface: PC/AT bus
- Memory Backup: Approx. 3 years
- Working Temperature: 0-50°C
- Working Humidity: 35-85%RH

## Main Power Supply DC5V input

[CN1] VHR-2N(JST),BVH-21T-1.1(JST)

Pin	Signal	IN/OUT	Pin	Signal	IN/OUT
1	+5V	IN	2	GND	-

(use only for standalone operation)

## LED

LED1(green)	Power ON
LED2(red)	7180CH1 Transfer error
LED3(green)	7180CH1 Receiving
LED4(red)	7180CH2 Transfer error
LED5(green)	7180CH2 Receiving

## Switch

SW1,SW2: I/O address selection

Initial value: 0340H~034FH(ITEM), 0740H(WINDOW)  
ON stands for "0"

SW1

No.	Address	Initial value
1	A8	OFF
2	A9	OFF
3	Unused	-
4	A11	ON
5	A12	ON
6	A13	ON
7	A14	ON
8	A15	ON

SW2

1	A4	ON
2	A5	ON
3	A6	OFF
4	A7	ON

Board reset: SW3 not implemented

7180 setting: SW4[CH1],SW5[CH2]

1	Address 0	ON implies "0"	Initial 0
2	Address 1	ON implies "0"	Initial 0
3	Address 2	ON implies "0"	Initial 0
4	Address 3	ON implies "0"	Initial 0
5	Master/Slave	ON implies "Master"	Initial ON
6	Ring mode	ON implies "IO-Ring"	Initial ON
7	Transfer speed	ON implies "2.5Mbps"	Initial OFF
8	Reverse twice transfer	ON implies "YES"	Initial OFF

## Attachments

CN1, CN2 are attached.

## Jumpers

JP1:22pin Interrupt setting (initial open)

Pin	IRQ
1-22	IR3 IRQ3(COM2)
2-21	IR4 IRQ4(COM1)
3-20	IR5 IRQ5(LPT2)
4-19	IR6 IRQ6(FDD)
5-18	IR7 IRQ7(LPT1)
6-17	IR9 IRQ9(redirect to IRQ2)
7-16	IR10 IRQ10
8-15	IR11 IRQ11
9-14	IR12 IRQ12
10-13	IR15 IRQ15
11-12	IR14 IRQ14(HARD DISK)

JP2: 12pin Host communication interface selection  
(can only select one)

<1-12><2-11><3-10>closed:RS232C  
<4- 9><5- 8><6- 7>closed:RS422

JP3:2pin Battery buffer switch (open default)

JP4:2pin SH boot selection (open default)

## Communication

[CN2] HDBB-25P,HDB-CTF(HIROSE) [Female on board side]

Pin	Signal	I/O	Description
1	GND	-	
2	SD1+	OUT	RS422:CH1
3	RD1+	IN	RS422:CH1
4	SD2+	OUT	RS422:CH2
5	RD2+	IN	RS422:CH2
6	D485+	IN/OUT	RS485
7	D485-	IN/OUT	RS485
8	485GND	-	
9	NC /422RXD-	- /IN	
10	232RXD/422RXD+	IN/IN	RS232C:CH2
11	232TXD/422TXD+	OUT/OUT	RS232C:CH2
12	NC /422TXD-	- /OUT	
13	GND	-	
14	SD1-	OUT	RS422:CH1
15	RD1-	IN	RS422:CH1
16	GND	-	
17	SD2-	OUT	RS422:CH2
18	RD2-	IN	RS422:CH2
19	+24VIN	IN	
20	DI	IN	Digital input
21	+5V	OUT	
22	NC		
23	232RTS	OUT	RS232C:CH2
24	232CTS	IN	RS232C:CH2\
25	+5V	OUT	

RS232C:CH2 can be switched to RS422 by setting JP2.

## Fics-RTI RS232C Communication

[CN3] HDEB-9S,HDE-CTF(HIROSE) [Male on board side]

Pin	Signal	IN/OUT	Pin	Signal	IN/OUT
1	NC	-	6	DSR	IN
2	RXD	IN	7	NC	-
3	TXD	OUT	8	NC	-
4	DTR	OUT	9	+5V	OUT
5	GND	-			