

Patented
It makes Technological Sense

STC SANTEST

I-SAC Series Servo Controller

Solution for all servo control systems - hydraulic, pneumatic, electric and others

SERVO CONTROLLER



- Adopting Simple Adaptive Control (SAC) theory among other modern control theories, realized robust adaptive control absorbing automatically plant parameter changes and plant time-variant influences.
- WindowsTM soft 「I-SAC Terminal」 enables GUI approach to parameter setting and monitoring.
- Wide interfaces to up-stream of PLC etc.
- Applied to various plants such as position, velocity, load control.
- Maintenance free, cost-effective.

I-SAC servo controller is the one that completely surpasses conventional classical control theory represented by PID. Robust control can be enjoyed through adaptive methodology by to the utmost overwhelming disturbances even though occurrences of unexpected circumstance changes at user plant. We do now present I-SAC servo controller where our proprietary knowledge is added to two degree of freedom control theory consisted of feedforwards through adaptively variable gains and feedback of augmented plant output.

I-SAC Series High-end Version

I-SAC MX

I-SAC MX is the high-end version of series employing 32bit DSP, in addition motion control function is integrated and increased I/O interfaces enable flexible measures to most any user needs.

• Motion Programme

User can set a motion profile into ISAC-MX and can automatically control the plant according to the profile. Various interfaces such as with PLC can be worked by giving special target value needed.

• Various Shakehands Signal

Servo On/Off, Automatic Zero Searching, In-Position output etc are equipped and can be friendly interfaced with PLC etc.

• 2-Axes Independent control and Axis Switching

Two Independent controllers are built-in and can switch axis during operations. Example is a firstly position control then immediate switch to load control in real time.



Model _____

I - SAC MX - /
 ① ② ③ ④ ⑤ ⑥

		symbol
channel 1	① command input	V,I,D,O
	② feed-back input	V,I,D,O
	③ controlled output	V or I
channel 2	④ command input	V,I,D,O
	⑤ feed-back input	V,I,D,O
	⑥ controlled output	V or I

Symbol

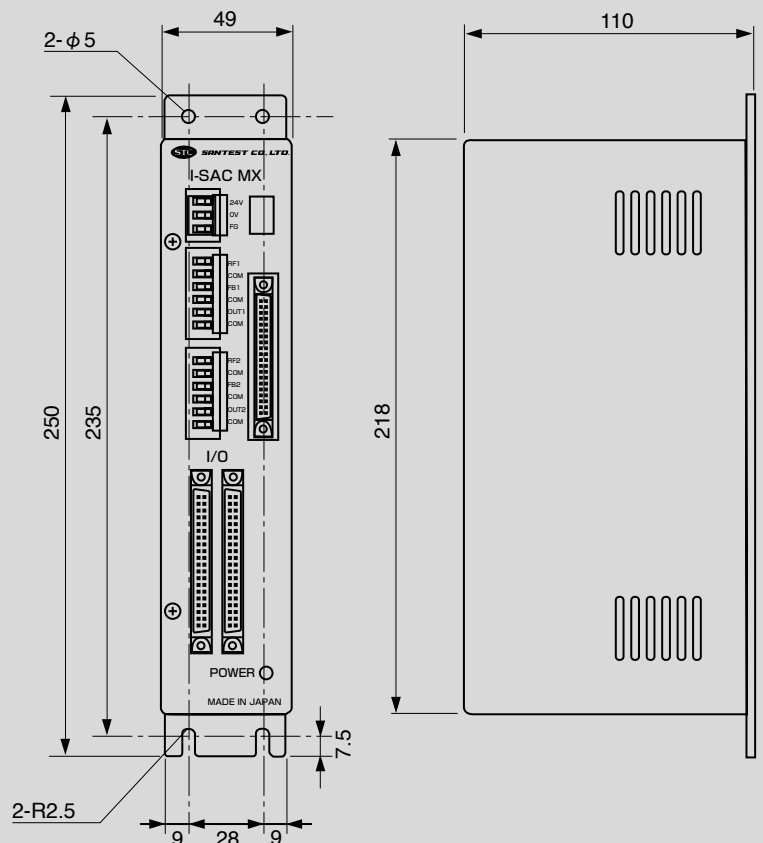
Command/feed-back

V : analog voltage (±10V)
 I : analog current (±20mA)
 D : differential line-driver
 O : digital open collector

Output

V : analog voltage ±10V
 I : analog current ±50mA (load200ΩMAX)

Dimensions _____



Compact Low-Cost type

I-SAC C1

I-SAC C1 is a compact and low-cost series,
User can add axes upto four according to his necessity.

• Axes upto 4 on your demand

One I-SAC C1-M (Elec Source/Communication board block) can accept upto 4 I-SAC C1-S (servo block) which provide compactness and low-cost.
Control processing is done independently by each DSP.

• Compact, Easy-Mounting

I-SAC C1 series are designed compact and can easily mount on DIN-rail.



Model

- Electric Source/Communication board block

I-SAC C1 - M

(I-SAC C1-S needs min one I-SAC C1-M)

- Servo block

I-SAC C1 - S -

① ② ③

- ① command input V,I,D,O
- ② feed-back input V,I,D,O
- ③ controlled output V or I

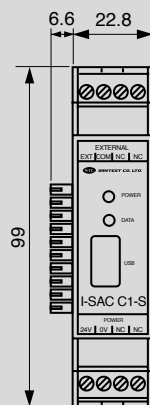
Command/feed-back

- V : analog voltage ($\pm 10V$)
- I : analog current ($\pm 20mA$)
- D : differential line-driver
- O : digital open collector

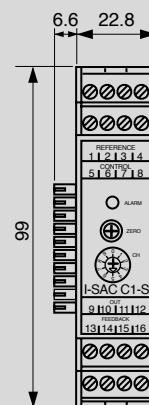
Operating output

- V : voltage output $\pm 10V$
- I : current output $\pm 50mA$ (load 200Ω MAX)

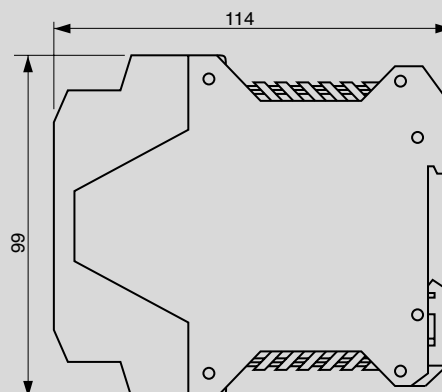
Dimensions



I-SAC C1-M



I-SAC C1-S



Characteristics

- **For any control plant**

you can build up sophisticated servo system for any physical variables (ex position, pressure, load, flow, temperature...). I-SAC will work the servo-system by outputting analog voltage/current.

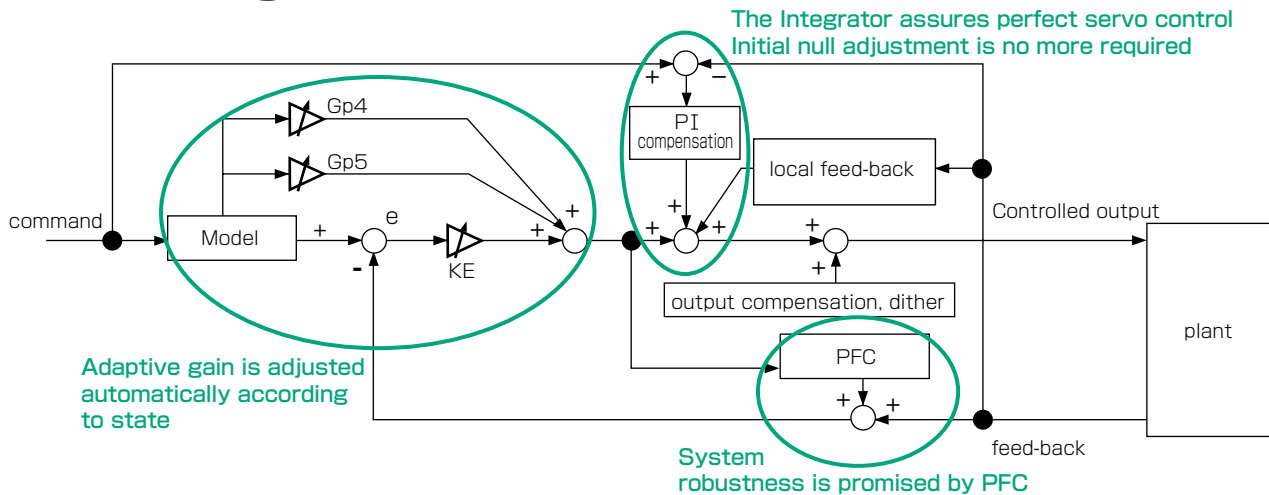
- **Simple Adaptive Control (SAC)**

presenting robust servo control and high response surpassing conventional PID control by adopting Simple Adaptive Control theory that only Santest has achieved real.

- **Wide input versatility**

can accept various signal such as analog voltage/current or CW/CCW, A/B signal, pulse train/direction signal
 ※user can change spec of scale/pulse of input signal.

I-SAC block diagram



Main specification

	I-SAC MX	I-SAC C1
• elec power	DC 24V (±15%) 250mA	DC 24V (±15%) 400mA (in case 4 axes max load)
• input signal	analog (±10V or ±20mA) (A/D16bit) or CW/CCW, pulse train/direction, A/B 1/2/4(multiply) (differential line driver or open collector)	analog (±10V or ±20mA) (A/D16bit) or CW/CCW, pulse train/direction, A/B 1/2/4(multiply) (differential line driver or open collector)
• output signal	±10V or ±50mA max load 200Ω (D/A16bit) (scale adjustable)	
• sampling	5kHz	3kHz
• general-purposed interface	Input 17 points, Output 12 points (per channel)	Input 2 points, Output 2 points (per channel)
• options	Integration compensation, velocity/acceleration feedback, dither, motion etc.	Integration compensation, velocity/acceleration feedback, dither, etc.

have to re-adjust parameters when work load changes
 plant time-variant changes demand parameter re-adjust
 hard work of servo null adjust

I-SAC will solve the problem!!