

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 compensating automatically plant parameter changes and plant time-variant influences.
- Windows™ soft [I-SAC Terminal] enables GUI approach to parameter setting and monitoring.
- Wide interfaces to up-stream of PLC etc.
- Applied to various plants for position, velocity and 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 achieved through adaptive methodology for the utmost overwhelming disturbances as well as occurrences of unexpected 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 consisting of feedforward 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 with motion control function integrated. Increased I/O interfaces enable flexible measures to most user needs.

•Motion Program

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

•Various Handshaking Signals

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

•2-Axis Independent control and Axis Switching

Two Independent controllers are built-in and can switch axes during operations. An 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

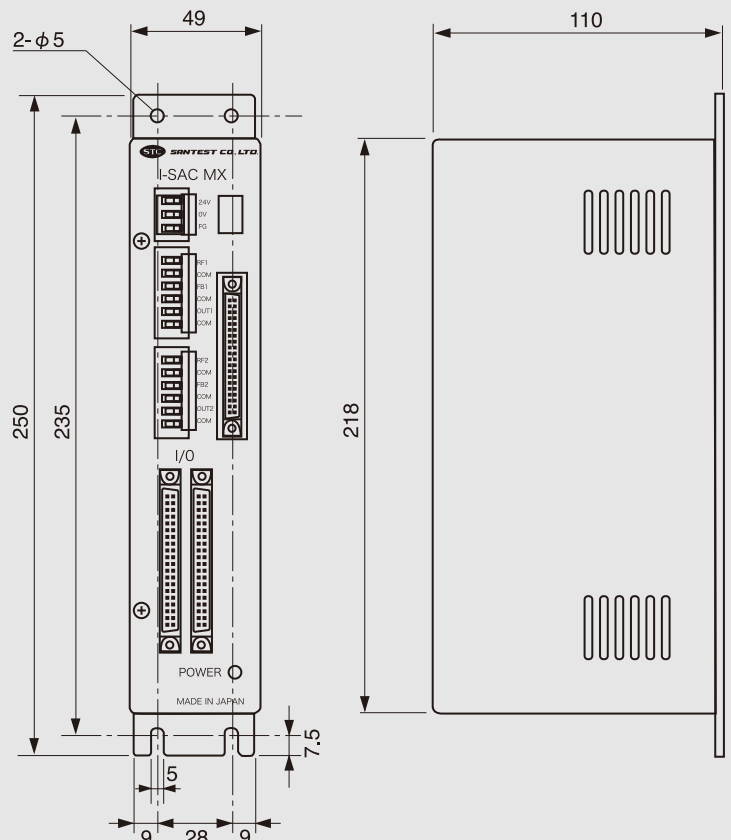
Command/feed-back

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(load 200ΩMAX)

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 the needs.

•Axes upto 4 on your demand

One I-SAC C1-M (Elec Source/Communication board block) can accept 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 be easily mounted to a 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

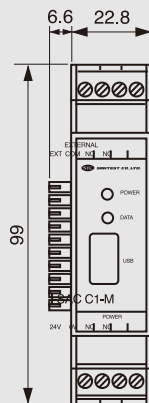
Command/feed-back

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

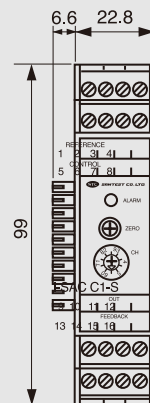
Operating output

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

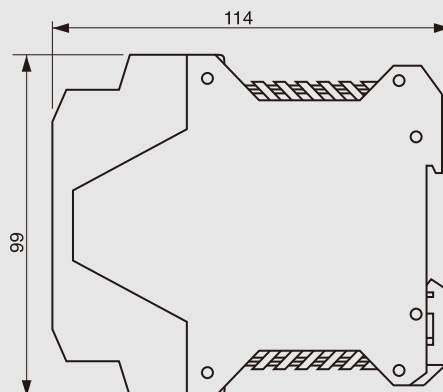
Dimensions



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.

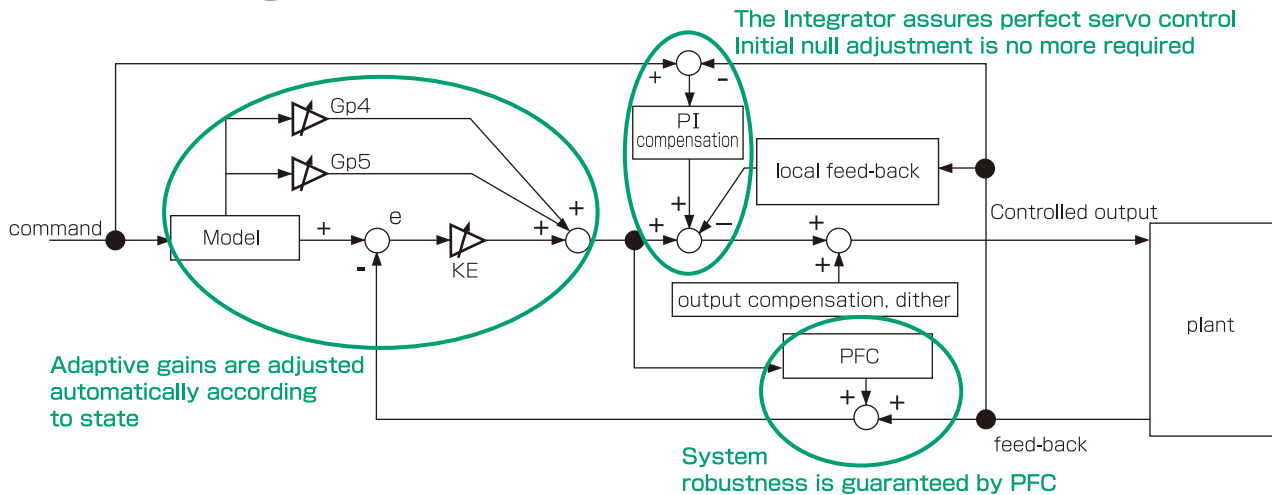
•Simple Adaptive Control(SAC)

presents high response robust servo control and surpasses conventional PID control by adopting Simple Adaptive Control theory that has been realized only by Santest.

•Wide input versatility

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

I-SAC block diagram



Main Specifications

| | I-SAC MX | I-SAC C1 |
|-----------------------------|---|---|
| •elec power | DC 24V (±15%)250mA | DC 24V (±15%)400mA(in sace 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/D12bit) 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 200ΩD/A 16bit) (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-adjustment?
- hard work of servo null adjustment?

I-SAC will solve the problem!!