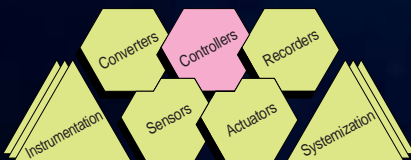


Super DigitroniK Line **SDC35/36**

Digital Indicating Controller

CE marking compliant (EN61010-1
EN61326-1)

*Functionality and Extreme Accuracy
Packaged in One Advanced Process Controller.*



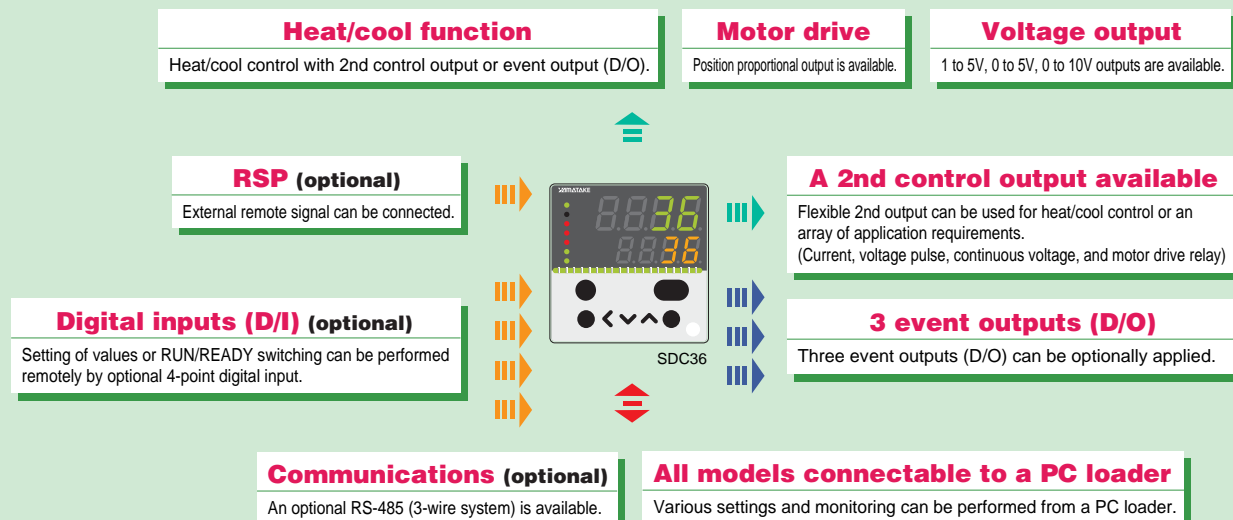
Innovation Style

An innovative next generation controller

Integration of a new algorithm, high accuracy ($\pm 0.1\%FS$) and high speed sampling cycle 0.1 seconds.
Advanced functions improve stability and disturbance response.



The wide variety of inputs and outputs of the SDC35/36 can be used to fulfill multiple application requirements.



Hardware | User friendly design provides for easy installation.

Simple design and compact

Simple design not available in conventional models.
The shortest depth in the world - 65mm.
Ultra thin bezel of 5mm fits in the tightest mounting areas.

Only 5mm thick bezel and easy-to-see panel mounting

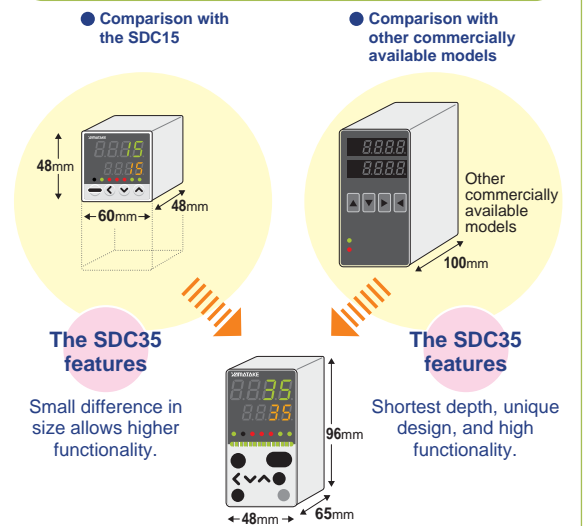


Rubber key

Finger-friendly buttons and operational keys improve operability and adds a unique look and design.



SDC35/36 vs SDC15 and other commercially available models



Control | Optimum control with new algorithms and advanced Auto-Tune technology.

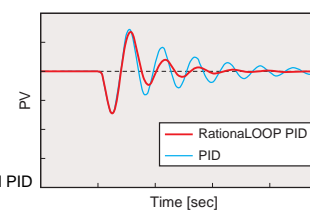
Greatly improved controllability ensured with a brand new algorithm

Stable control that is unaffected by disturbance has been realized by including the highly accurate "RationalLOOP PID" control logic and the "Just-FITTER" algorithm (effective in suppressing overshoot).

RationalLOOP PID

Hunting is suppressed almost immediately with the addition of RationalLOOP PID to the conventional PID.

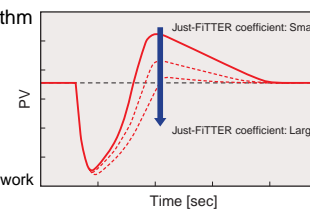
Difference between RationalLOOP PID and PID



Just-FITTER

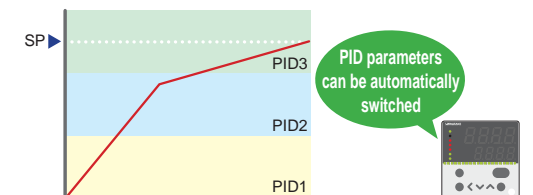
Just-FITTER is an algorithm that restricts overshoot within the disturbance response and step response functions.

Just-FITTER at work



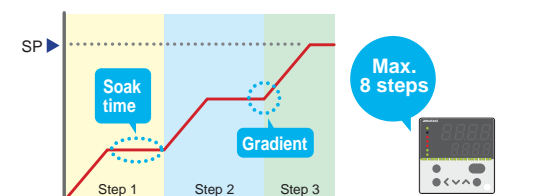
Zone PID control

The SDC35/36 has the ability to switch PID parameters depending on the process input value or the set-point value utilizing "zoned" temperature ranges. Both the process value and the set-point can be used to initiate change of the PID parameters to provide more detailed and optimum control of the application.



Programmable recipe control

Maximum of 8 set points (SP) can be set in the SDC35/36. Each SP has soak time and gradient settings, enabling a maximum of 8 steps (16 segments) of programmable recipe control.



Three separate Auto-Tuning features

The SDC35/36 includes the following three types of Auto-Tuning as standard functions:

- Normal AT (Auto Tuning)
- Immediate response type Auto-Tune is suitable for heated systems with fast responding heater designs.
- Stable type Auto-Tuning which is suitable for systems involving a slow response heater design.

Better control characteristics can be obtained depending on the variables of the application.

Operation & Monitoring Easy-to-see display and operability assured simultaneously.

Large and easy-to-use dual seven-segment displays

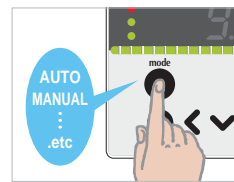
Reliable visibility assured even from a distance. Process value (PV), set-point (SP) or other values are clearly indicated on two displays.



Mode key for easy change of operation modes

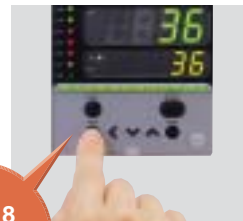
The following operation modes can easily be switched by pressing the mode key:

- AUTO/MANUAL, RUN/READY, remote SP/local SP, contact latch cancellation, etc.



Customizable parameter key

The SDC35/36 offers user customization of the "para" key. A maximum of 8 parameters can be assigned. This key is used to access and monitor frequently used parameters without navigating the menus.



Max. 8 parameters can be assigned

Specifications

| | | | | | | | | | | | | | |
|-------------------------|---|--|---------------|---------|---------------|---------------|---------|--------------------|-------------|--------------------|--------------------|--------------------|--|
| PV input | Type | Thermocouple, RTD, DC voltage, DC current. | | | | | | | | | | | |
| | Range | Refer to the input type and range table | | | | | | | | | | | |
| | Sampling cycle | 0.1 seconds | | | | | | | | | | | |
| Indication | Method | Digital 4-digit, 7-segment | | | | | | | | | | | |
| | Accuracy | ±0.1%FS±1 digit | | | | | | | | | | | |
| Control output | Model No. | R0 | V0 | C0 | VC | VV | CC | VD | R1 | CD | D0 | DD | |
| | Control mode | ON/OFF control, time proportional PID, current proportional PID | | | | | | | | | | | |
| | 1st control output | Relay | Voltage pulse | Current | Voltage pulse | Voltage pulse | Current | Voltage pulse | Motor drive | Current | Continuous voltage | Continuous voltage | |
| | 2nd control output | - | - | - | Current | Voltage pulse | Current | Continuous voltage | - | Continuous voltage | - | Continuous voltage | |
| | No. of PID groups | 8 | | | | | | | | | | | |
| External switch input | PID auto-tuning | Automatic setting of PID values by limit cycle method (selectable from normal type, quick response type or stability tape) | | | | | | | | | | | |
| | No. of inputs | Max. 4 points | | | | | | | | | | | |
| Event | Function | LSP No., PID group No., READY/RUN changeover, timer start/stop, etc. | | | | | | | | | | | |
| | No. of outputs | Max. 3 points (internal 8 points) | | | | | | | | | | | |
| Heater line break alarm | Function | Selectable from PV, SP, deviation value, absolute value, alarm, timer output, heater line break alarm, etc. | | | | | | | | | | | |
| | No. of inputs | 2 points (optional) | | | | | | | | | | | |
| Analog output | No. of outputs | Max. 3 points | | | | | | | | | | | |
| | Type | Selectable from PV, SP or MV | | | | | | | | | | | |
| Communication | Communication system | RS-485 | | | | | | | | | | | |
| | No. of connectable units | Max. 31 units | | | | | | | | | | | |
| | Communication speed | Max. 38400bps | | | | | | | | | | | |
| Additional processing | Inspection certificate and traceability certification supported | | | | | | | | | | | | |
| General | Rated power supply | AC power supply model: 100 to 240Vac 50/60Hz | | | | | | | | | | | |
| | Power consumption | SDC35 AC power supply model: 12VA SDC36 AC power supply model: 12VA | | | | | | | | | | | |
| | Approval bodies | CE marking compliant | | | | | | | | | | | |
| | Weight (mass) | SDC35: 250g, SDC36: 300g | | | | | | | | | | | |

Input Type and Range

| Sensor | Sensor type | Range (°C) | Range (°F) |
|---------------------|------------------|------------------|---------------|
| Thermocouple | K | -200 to +1200 | -300 to +2200 |
| | | 0 to 1200 | 0 to 2200 |
| | | 0 to 800 | 0 to 1500 |
| | | 0.0 to 600.0 | 0 to 1100 |
| | | 0.0 to 400.0 | 0 to 700 |
| | | -200.0 to +400.0 | -300 to +700 |
| | | -200.0 to +200.0 | -300 to +400 |
| | | 0 to 1200 | 0 to 2200 |
| | | 0.0 to 800.0 | 0 to 1500 |
| | | 0.0 to 600.0 | 0 to 1100 |
| | J | -200.0 to +400.0 | -300 to +700 |
| | | 0.0 to 800.0 | 0 to 1500 |
| | | 0.0 to 600.0 | 0 to 1100 |
| | | 0.0 to +400.0 | -300 to +700 |
| | E | 0.0 to 800.0 | 0 to 1500 |
| | | 0.0 to 600.0 | 0 to 1100 |
| | T | -200.0 to +400.0 | -300 to +700 |
| | R | 0 to 1600 | 0 to 3000 |
| | S | 0 to 1600 | 0 to 3000 |
| | B | 0 to 1800 | 0 to 3300 |
| N | 0 to 1300 | 0 to 2300 | |
| PL II | 0 to 1300 | 0 to 2300 | |
| WRe5-26 | 0 to 1400 | 0 to 2400 | |
| WRe5-26 | 0 to 2300 | 0 to 4200 | |
| Ni-NiMo | 0 to 1300 | 0 to 2300 | |
| PR40-20 | 0 to 1900 | 0 to 3400 | |
| DIN U | -200.0 to +400.0 | -300 to +700 | |
| DIN L | -100.0 to +800.0 | -150 to +1500 | |
| Golden iron chromel | 0.0K to 360.0°K | 0.0 to 360.0°K | |

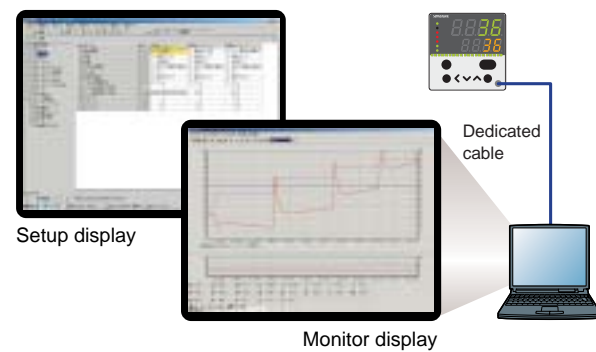
| Sensor | Sensor type | Range (°C) | Range (°F) |
|-----------|------------------|---|--------------|
| RTD | Pt100 | -200.0 to +500.0 | -300 to +900 |
| | JPt100 | -200.0 to +500.0 | -300 to +900 |
| | Pt100 | -200.0 to +200.0 | -300 to +400 |
| | JPt100 | -200.0 to +200.0 | -300 to +400 |
| | Pt100 | -100.0 to +300.0 | -150 to +500 |
| | JPt100 | -100.0 to +300.0 | -150 to +500 |
| | Pt100 | -100.0 to +200.0 | -150 to +400 |
| | JPt100 | -100.0 to +200.0 | -150 to +400 |
| | Pt100 | -100.0 to +150.0 | -150 to +300 |
| | JPt100 | -100.0 to +150.0 | -150 to +300 |
| | Pt100 | -100.0 to +200.0 | -150 to +400 |
| | JPt100 | -100.0 to +200.0 | -150 to +400 |
| | Pt100 | -50.0 to +200.0 | -50 to +400 |
| | JPt100 | -50.0 to +200.0 | -50 to +400 |
| | Pt100 | -50.0 to +100.0 | -50 to +200 |
| | JPt100 | -50.0 to +100.0 | -50 to +200 |
| | Pt100 | -60.0 to +40.00 | -60 to +100 |
| | JPt100 | -60.0 to +40.00 | -60 to +100 |
| | Pt100 | -40.0 to +60.0 | -40 to +140 |
| | JPt100 | -40.0 to +60.0 | -40 to +140 |
| Pt100 | -10.00 to +60.00 | -10 to +140 | |
| JPt100 | -10.00 to +60.00 | -10 to +140 | |
| Pt100 | 0.0 to 100.0 | 0 to 200 | |
| JPt100 | 0.0 to 100.0 | 0 to 200 | |
| Pt100 | 0.0 to 200.0 | 0 to 400 | |
| JPt100 | 0.0 to 200.0 | 0 to 400 | |
| Pt100 | 0.0 to 300.0 | 0 to 500 | |
| JPt100 | 0.0 to 300.0 | 0 to 500 | |
| Pt100 | 0.0 to 500.0 | 0 to 900 | |
| JPt100 | 0.0 to 500.0 | 0 to 900 | |
| Linear | 0 to 10mV | Scaling in the range of -1999 to +9999 Decimal point position changeable | |
| | -10 to +10mV | | |
| | 0 to 100mV | | |
| | 0 to 1V | | |
| | 1 to 5V | | |
| | 0 to 5V | | |
| | 0 to 10V | | |
| | 0 to 20mA | | |
| 4 to 20mA | | | |



Software Creating new methods of installation and operation utilizing a wide variety of software functions.

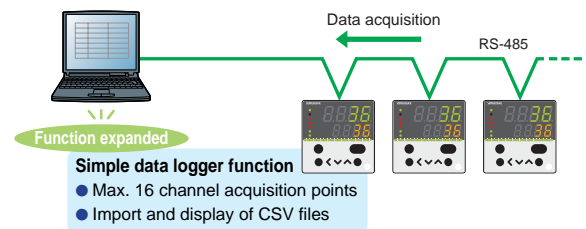
PC loader (connection to PC via dedicated cable) used to set parameters and monitor values

The SDC35/36 can be conveniently connected to a PC via our loader software. Easy connection is provided via a dedicated connector cable. The software contains various functions such as parameter settings, trend monitoring and CSV output of acquisition data.



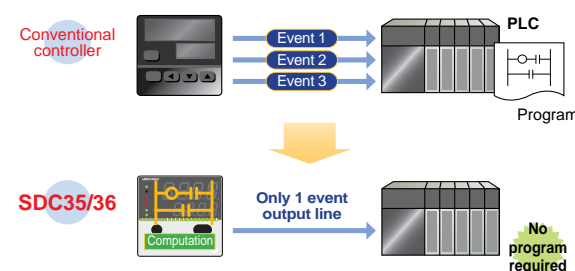
Simple to use data logging function

Data logging with the PC loader from one or several SDC35/36 can be accomplished via communications. DI/DO status can be logged simultaneously.



Event configuration functionality enables wiring reduction yielding labor cost savings

In the SDC35/36, a maximum of 8 internal event points are provided. These internal events can be assigned to 3 event outputs using logic operations. The event output reduction in wiring yields labor cost savings and flexibility when expanding instrumentation.



| Table | Selection | Description | | | | |
|-------|-----------------------|-------------|--|-----------------------------|------------------------------|---------------|
| I | Basic model No. | C35T | Digital Indicating Controller (48x96mm size) | | | |
| | | C36T | Digital Indicating Controller (96x96mm size) | | | |
| II | Control output | | Output 1 | Output 2 | Reference | |
| | | R0 | Relay | ∅ | ∅ | |
| | | V0 | Voltage pulse | ∅ | ∅ | |
| | | C0 | Current | ∅ | ∅ | |
| | | D0 | Continuous voltage (Note.3) | ∅ | ∅ | |
| | | R1 | Motor drive relay | ∅ | w/MFB (motor feedback) | |
| | | VC | Voltage pulse | Current | ∅ | |
| | | VV | Voltage pulse | Voltage pulse | ∅ | |
| | | CC | Current | Current | ∅ | |
| | | VD | Voltage pulse | Continuous voltage (Note.3) | ∅ | |
| | | CD | Current | Continuous voltage (Note.3) | ∅ | |
| | | DD | Continuous voltage (Note 3) | Continuous voltage (Note.3) | ∅ | |
| | | III | Input type | U | Universal (full multi) input | |
| IV | Power supply | A | 100 to 240Vac | | | |
| | | D | 24Vac/24Vdc (available soon) | | | |
| V | Option (1) | | EV (DO) | Auxiliary output | | |
| | | 1 | 3 points | ∅ | | |
| | | 2 | 3 points | Current | | |
| | | 3 | 3 points | Voltage | | |
| | | 4 | Independent 2 points | ∅ | | |
| | | 5 | Independent 2 points | Current | | |
| | | 6 | Independent 2 points | Voltage | | |
| VI | Option (2) | | CT (Note 2) | DI | RSP | Communication |
| | | 0 | ∅ | ∅ | ∅ | ∅ |
| | | 1 | 2 points | 4 points | ∅ | ∅ |
| | | 2 | 2 points | 4 points | ∅ | RS-485 |
| | | 3 | 2 points | 2 points | Available | ∅ |
| | | 4 | 2 points | 2 points | Available | RS-485 |
| VII | Additional processing | 00 | None | | | |
| | | D0 | w/test data | | | |
| | | Y0 | w/traceability certification | | | |

Note 1: Not selectable with the DC power supply model.

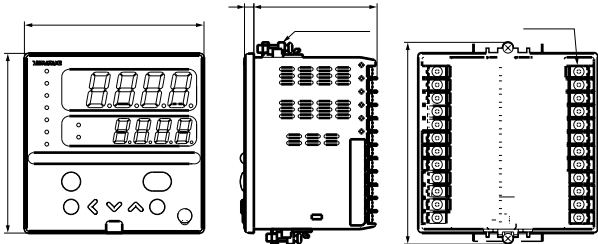
Note 3: Selectable from 1 to 5V, 0 to 5V, or 0 to 10V.

Note 2: CT is not applicable when R1 control output is selected.

● SDC35

| Model No. | Name and specifications |
|------------|---|
| SLP-C35J50 | SLP-C35 standard loader for the SDC35/36 Version 2.0CD with loader cable |
| SLP-C35J51 | SLP-C35 standard loader for the SDC35/36 Version 2.0CD, operation manual, without loader cable |

● SDC36



| Model No. | Name and specifications |
|--------------|---|
| QN206A | Current transformer (5.8mm dia.) |
| QN212A | Current transformer (12mm dia.) |
| 81446915-001 | Hard cover for the SDC35 |
| 81446916-001 | Hard cover for the SDC36 |
| 81446912-001 | Terminal cover for the SDC35 |
| 81446913-001 | Terminal cover for the SDC36 |
| 81409654-001 | Mounting bracket (included with the controller) |

⚠ RESTRICTIONS ON USE

This product has been designed, developed and manufactured for general-purpose application in machinery and equipment. Accordingly, when used in applications outlined below, special care should be taken to implement a fail-safe and/or redundant design concept as well as a periodic maintenance program.

- Safety devices for plant worker protection
- Start/stop control devices for transportation and material handling machines
- Aeronautical/aerospace machines
- Control devices for nuclear reactors

Never use this product in applications where human safety may be put at risk.



Specifications are subject to change without notice.

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