Multi Loop Controller
SDC45A/46A
CE marking compliant

High-speed, high-accuracy and high-performance
next-generation controllers.

Please, read ‘Terms and Conditions’ from following URL before the order and use.
http://www.azbil.com/products/bi/order.html

Azbil Corporation
Advanced Automation Company

Yamatake Corporation changed its name to Azbil Corporation on April 1, 2012.
1-12-2 Kawana, Fujisawa
Kanagawa 251-8522 Japan
URL: http://www.azbil.com

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The capabilities you expect from a high-end model—these controllers offer highly advanced functionality.

High speed (25ms), high accuracy (±0.1% rdg) and a new algorithm. Full multi-range input for 2 loops opens new vistas for control.

**Hardware**

- **Full multi-range input**
  - Both inputs of the 2-input model are full multi-range. This versatile model is suitable for use with temperature sensors, signal transmitters, PH meters, and various linear signal applications. Customization is available on request, for applications such as signal for RS, 2-loop PID control, and cascade control.

- **Power supply can be installed for signal transmitter (optional).**
  - Up to two 24Vdc 30mA power supplies can be installed (one for the SDC45A). An external power supply is not required, allowing simple wiring for use with signal transmitter, etc.

- **IP65 front panel protection**
  - If the included gasket is used, the front panel has IP65 splash-proof protection. This allows the controller to be used for food manufacturing processes, etc.

- **Easy-to-operate keys**
  - All necessary keys are arranged for easy setting and operation. Mechanical keys click when used, enhancing usability.

**Software**

- **Configure and monitor from a PC**
  - The SDC45A/46A can connect to a PC via the Smart Loader Package (SLP), which includes a dedicated connector cable. The SLP software allows parameter setting, trend monitoring, and data output as CSV files.

- **Easy data logging function**
  - The communications function of the SDC45A/46A allows data logging of multiple controllers using the Smart Loader Package. DI/DO status can be logged simultaneously.

- **Event configuration functionality means less wiring, reduced labor costs**
  - The SDC45A/46A provides 16 internal event settings, which can be assigned to relay output or DO. A robust event output function reduces wiring and labor costs and increases flexibility when expanding instrumentation.

**A generous variety of I/O, to satisfy high-level control demands.**

- **Suitable for multiple application requirements**
  - PV1 input
    - Full multi-range
  - PV2 input (optional)
    - Full multi-range (also applicable as RSP)
  - Digital inputs (optional)
    - Up to 14 digital inputs can be used to change modes or settings.
  - Communications (optional)
    - RS-485 (3-wire system)
  - PC compatible
  - Configure and monitor on a PC using the Smart Loader Package.
  
- **Available control modes**
  - PID, heat/cool, 2-loop PID, and cascade control.

- **Output**
  - A wide variety is available, including current, voltage and relay. Up to 7 can be selected (SDC46A).

- **Heat/cool function**
  - Two outputs are used for heat/cool control.

- **Digital outputs (optional)**
  - Up to 8 DOs are available, including various event and device status outputs.

Illustration shows the SDC46A.
High-intensity LEDs for viewing ease
High-intensity LEDs are used for 7-segment dual displays and 11-segment auxiliary display, ensuring clear visibility. All-orange LED models are also available, offering markedly improved outdoor visibility.

Mode keys designed for usability
Mode keys are arranged for easy use. Keys (auto/manual, remote SP/local SP, AT start, etc.) can be changed with a single action. User-assignable function keys can be used for function changeover or recall of up to 8 parameters.

Control

I/O linearization table is a standard feature
Features a 20-point linearization table for use just after input processing and just before control output processing.

Fixed output level function
For equipment startup or in the initial processing stage, constant control output on a temporary basis is available for purposes of equipment protection or control stabilization. Up to 8 set points can be set, allowing flexibility for a variety of application needs.

Heat/cool control
Up to 7 outputs are available to handle a wide variety of heat/cool control requirements.

New algorithms for enhanced control
Stable control that is unaffected by disturbances is accomplished using highly accurate Ra-PID (RationaLoop PID) control logic and the Just-FITTER algorithm for overshoot suppression.

3 types of auto-tuning (AT) are standard features
The SDC45A/46A is equipped with:
- Regular AT
- Quick-response AT, optimal for systems that heat up easily
- Stable operation AT, optimal for systems that heat up and cool down easily

Cascade control (2-input model)
PID cascade control can be done using only one controller acting as both master and slave. This is very effective for a process with a large dead time. When using 2 units for cascade control, the control mode can be easily switched (cascade control ⇒ slave control only).

Backup controller (2-input model)
When control is handled by another device such as DCS, and is interrupted due to power failure or malfunction, bumpless transfer to a controller can be initiated by a preset value or tracking of the other device’s output.

Dimensions
### Selection Guide

- **Detailed model No.** Specifications required for a particular application can be selected in detail, allowing purchase of the optimal device.
- **Combined function model No.** Easy selection from pre-made combinations of required functions. Selections feature multiple IOs, so these devices can be used flexibly for a variety of application requirements (especially useful for engineering manufacturers and factory maintenance staff).

#### Detailed model No.  
(usable for equipment manufacturers)

<table>
<thead>
<tr>
<th>Option</th>
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<tbody>
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<td>SLP-C45J60</td>
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<td>Option 2</td>
<td>Use for a variety of applications</td>
<td>81441421-001</td>
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- **Basic model No.:**
  - 81441420-001: SLP-C45J60
  - 81441421-001: SLP-C45J61

- **Combined function model No.** (with all-orange LED displays, CE marking)  
(usable for engineering manufacturers and factory maintenance staff)

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#### Accessories (sold separately)

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- **Communications (RS-485):** 2 digital inputs + 8 digital outputs + RS-485 communications
- **Input 2:** 2 digital inputs + 8 digital outputs
- **Output 5:** 1 relay output + 2 digital inputs (DI-F 1, 2)
- **Output 6:** 1 current output (output 3) + 1 voltage pulse output (output 4) + 1 relay output (output 5)
- **Output 7:** 2 voltage pulse outputs

#### Notes:
1. There are no digital inputs if "SS" is selected for Outputs 3, 4.
2. There are 8 digital inputs if "SS" is selected for Outputs 3, 4.
3. There are no digital inputs if "SS" is selected for Outputs 3, 4.
4. There are 8 digital inputs if "SS" is selected for Outputs 3, 4.
5. There are 12 digital inputs + 8 digital outputs + RS-485 communications (note 1)
6. There are 12 digital inputs + 8 digital outputs + RS-485 communications (note 1)
7. There are 2 CT inputs + 8 digital inputs (note 3)
8. There are 14 digital inputs + 8 digital outputs (note 4)
9. There are 12 digital inputs + 8 digital outputs + RS-485 communications (note 3)
10. There are 12 digital inputs + 8 digital outputs + RS-485 communications (note 3)
11. There are 2 current outputs (note 1)
12. There are 2 current outputs (note 1)
13. There are 10 digital inputs (note 2)
14. There are 2 form 1a relays
15. There are 2 form 1a relays
16. There are 24 Vdc
17. There are 100 to 240 Vac
18. There are CE marking, cUL, orange color for all LEDs
19. There are CE marking, cUL, orange color for all LEDs
20. There are Inspection certificate
21. There are Inspection certificate
22. There are 2 CT inputs + 2 digital inputs + 8 digital outputs + RS-485 communications (note 5)
23. There are 2 CT inputs + 2 digital inputs + 8 digital outputs (note 5)
24. There are 2 CT inputs + 12 digital inputs + 8 digital outputs + RS-485 communications (note 5)
25. There are 2 CT inputs + 12 digital inputs + 8 digital outputs (note 5)

#### Additional Notes:
- CE marking, cUL: Requires that devices are safe, that high-level engineering has been applied to ensure safety, and that the devices have a certain level of safety, as recognized by CE.
- CE marking, orange color for all LEDs: Provides traceability certification.
- EN61010-1: Defines the safety requirements for electric equipment of measurement, control, and laboratory use.
- EN 61326: Requires that the electromagnetism generated by the device does not interfere with the operation of communications equipment, and that the device have a certain level of resistance to electromagnetic interference.
- CE marking, cUL: Requires that devices are safe, that high-level engineering has been applied to ensure safety, and that the devices have a certain level of safety, as recognized by CE.
- CE marking: Supports traceability certification.
- Inspection certificate: Provides traceability certification.

#### Memo

- To see the adjustment for the display, please refer to the figure.