Drawings

Model UT35A
Digital Indicating Controller

SD 05P01D41-01EN

External Dimensions

Unit: mm (approx. inch)

External Dimensions

Bracket

Terminal cover

Bracket

1 to 10 mm (0.04 to 0.39 inch) (panel thickness)

Panel Cutout Dimensions

General mounting

Side-by-side close mounting

‘N’ stands for the number of controllers to be installed. However, the measured value applies if N≥5.

Normal tolerance: ±(value of JIS B 0401-1998 tolerance grade IT18)/2
Terminal Wiring Diagrams

Control output
- Relay contact output (Suffix code: Type1=-0)
- Terminal wiring differs in Heating/cooling control and Position proportional control. Refer to the terminals of Position proportional control output and Heating/cooling control output below. Factory default: Control output is relay.

Heating/cooling control output
- Heating/cooling relay contact output (Suffix code: Type 1=-2)
- Wiring direction

Contact output
- ALM (Equipped as standard)
- External contact output (relay)
  - Alarm-3 output (PV high limit)
  - Alarm-2 output (PV low limit)
  - Alarm-1 output (PV threshold)
- Relay contact rating: 240 V AC, 3 A
- Relay contact rating: 30 V DC, 3 A (resistance load)

Power supply
- 100-240 V AC power supply
- 24 V AC/DC power supply
- Optional suffix code (DC) 24 V AC/DC power supply
- Allowable range: 100–240 V AC (+10%/-15%) 50/60 Hz phase d

Position proportional control output
- VALV
- Relay contact output
- Feedback input (Suffix code: Type1= 1)
- Feedback input
- Resistance: 100–240 Ohm
- Optional suffix code (HA)

Retransmission output
- RET (Equipped as standard)
- Can be used for 15 V DC loop power supply when not used for retransmission output.

Cooling-side control output
- RET/OUT2 (Suffix code: Type 1=-2)
- Can not be used for retransmission output or 15 V DC loop power supply when current/voltage pulse output is used.
- Current output range can be changed.

Contact input
- DI (Equipped as standard)
- External contact input
- Function can be assigned to the terminals with no function.

Heater break alarm
- HBA (Optional suffix code /HA)
- External contact input
- Relay contact rating: 24 V DC, 5 A

Faulty default: PV input or Retransmission output

Load resistance 600 Ohm

Current/voltage pulse output
- Current/voltage pulse output
- Current output range can be changed.
- In Position proportional type, can be used for retransmission output or 15 V DC loop power supply.

Current (mA) input
- 4-20 mA DC
- 0-20 mA DC

Voltage (mV, V) input
- 4-20 mA DC
- 0-20 mA DC

Factory default: PV input

Default: PV retransmission

Cooling-side control output
- 15 V DC loop power supply when not used for retransmission output.

Relay contact output
- Load resistance 600 Ohm
- Relay contact rating: 240 V AC, 1 A
- Relay contact rating: 30 V DC, 1 A (resistance load)

Control output
- OUT (Suffix code: Type 1=-0, -1 or -2)
- 15 V DC loop power supply

Voltage pulse (12 V)
- Can be used for retransmission output or 15 V DC loop power supply when control output is not used.
- Current output range can be changed.
- In Position proportional type, can be used for retransmission output or 15 V DC loop power supply.

Terminal wiring differs in Heating/cooling control and Position proportional control. Refer to the terminals of Position proportional control output and Heating/cooling control output below. Factory default: Control output is relay.

Heater current detection input
- 30 V DC, 3 A (resistance load)
- Relay contact rating: 240 V AC, 1 A
- Relay contact rating: 30 V DC, 1 A (resistance load)

Function can be assigned to the terminals with no function.
Terminal Wiring Diagrams (E1-Terminal Area and E4-Terminal Area)

**E1-Terminal Area**

**Contact input**

 DI (Suffix code: Type 2=2)

Contact input / Contact output

DVDO (Suffix code: Type 2=1)

**24 V DC loop power supply**

LPS24 (Optional suffix code/LP)

**E4-Terminal Area**

**Contact output**

DO (Suffix code: Type 2=2)

Factory default: No function

Function can be assigned to the terminals with no function.

Factory default: No function

Factory default: No function

Factory default: No function

Factory default: No function

Factory default: No function

Factory default: No function

Factory default: No function

Function can be assigned to the terminals with no function.

Factory default: No function

Factory default: No function

Factory default: No function

Function can be assigned to the terminals with no function.
Terminal Wiring Diagrams (E3-Terminal Area)

**RS-485 communication (RS485)**

<table>
<thead>
<tr>
<th>Pin</th>
<th>Signal name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SCL(U)</td>
<td>Clock</td>
</tr>
<tr>
<td>1</td>
<td>SDA(S)</td>
<td>Data</td>
</tr>
<tr>
<td>2</td>
<td>SDO</td>
<td>Data</td>
</tr>
<tr>
<td>3</td>
<td>SDA(S)</td>
<td>Data</td>
</tr>
<tr>
<td>4</td>
<td>SDO</td>
<td>Data</td>
</tr>
</tbody>
</table>

| Suffix code: Type 3=1 |

**Ethernet communication (with gateway function)**

<table>
<thead>
<tr>
<th>Pin</th>
<th>Signal name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>100M bps</td>
<td>100M bps</td>
</tr>
<tr>
<td>1</td>
<td>10M bps</td>
<td>10M bps</td>
</tr>
<tr>
<td>2</td>
<td>Green</td>
<td>Green</td>
</tr>
<tr>
<td>3</td>
<td>Link failure</td>
<td>Link failure</td>
</tr>
<tr>
<td>4</td>
<td>Amber</td>
<td>Amber</td>
</tr>
</tbody>
</table>

**PROFIBUS-DP communication (with Modbus master)**

<table>
<thead>
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<th>Pin</th>
<th>Signal name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>VP</td>
<td>VP</td>
</tr>
<tr>
<td>1</td>
<td>RxD/TxD-P</td>
<td>RxD/TxD-P</td>
</tr>
<tr>
<td>2</td>
<td>RxD/TxD-N</td>
<td>RxD/TxD-N</td>
</tr>
<tr>
<td>3</td>
<td>DGND</td>
<td>DGND</td>
</tr>
<tr>
<td>4</td>
<td>SHIELD</td>
<td>SHIELD</td>
</tr>
</tbody>
</table>

**PROF (Suffix code: Type 3=4)**

1. If the UT is located at the end of a segment for the PROFIBUS communication wiring, terminating resistors are separately needed. These are to be prepared by users. (390 Ω: 2 pcs., 220 Ω: 1 pc., or an active terminator.)

**CC-Link communication (with Modbus master)**

<table>
<thead>
<tr>
<th>Pin</th>
<th>Signal name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>DA</td>
<td>DA</td>
</tr>
<tr>
<td>1</td>
<td>DB</td>
<td>DB</td>
</tr>
<tr>
<td>2</td>
<td>CAN_H</td>
<td>CAN_H</td>
</tr>
<tr>
<td>3</td>
<td>CAN_L</td>
<td>CAN_L</td>
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<tr>
<td>4</td>
<td>V+</td>
<td>V+</td>
</tr>
<tr>
<td>5</td>
<td>V-</td>
<td>V-</td>
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</tbody>
</table>

**DeviceNet communication (with Modbus master)**

<table>
<thead>
<tr>
<th>Pin</th>
<th>Signal name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>CAN_H</td>
<td>CAN_H</td>
</tr>
<tr>
<td>1</td>
<td>CAN_L</td>
<td>CAN_L</td>
</tr>
<tr>
<td>2</td>
<td>V+</td>
<td>V+</td>
</tr>
<tr>
<td>3</td>
<td>V-</td>
<td>V-</td>
</tr>
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</table>

**CC-L (Suffix code: Type 3=3)**

If the UT is located at the end of a segment for the CC-Link communication wiring, terminating resistors are separately needed. These are to be prepared by users. (110 Ω: 1 pc.)

**DeviceNet (Suffix code: Type 3=6, except Type 2=3)**

If the UT is located at the end of a segment for the DeviceNet communication wiring, terminating resistors are separately needed. These are to be prepared by users. (121 Ω: 1 pc.)