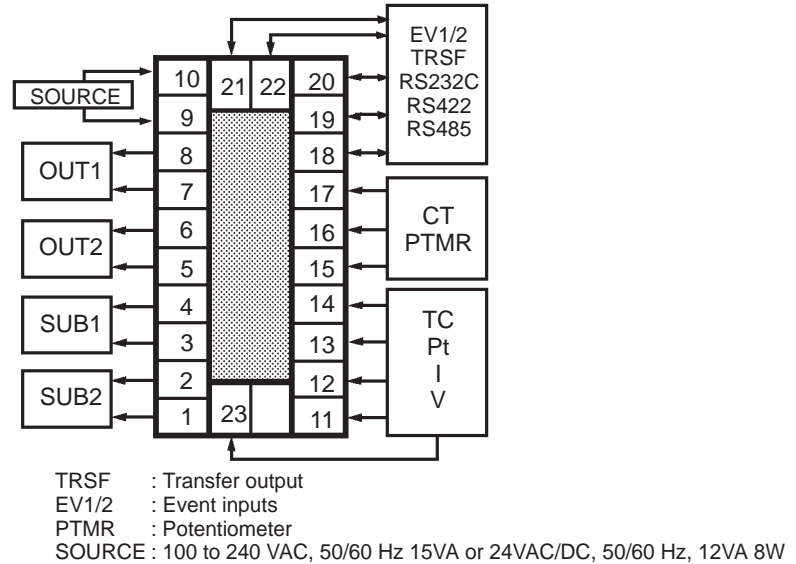


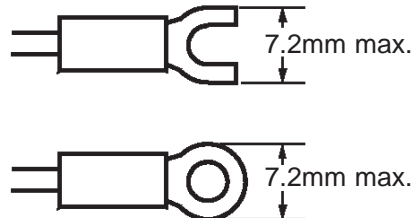
Wiring Terminals

Terminal arrangement



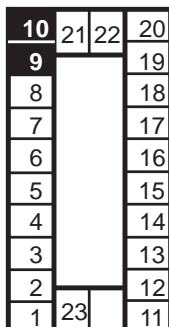
Precautions when wiring

- On some models, terminals are not used and are left free. Do not wire these terminals.
- Separate input leads and power lines in order to protect the controller and its lines from external noise.
- We recommend using solderless terminals when wiring the controller.
- Tighten the terminal screws using a torque no greater than 0.78 N·m (8kgf·cm).
- Use the following type of solderless terminals for M3.5 screws.



Wiring

Power supply



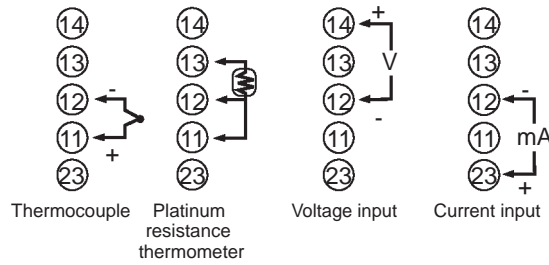
In the following wiring diagrams, the left side of the terminal Nos. indicates the inside of the controller.

- Input power to terminals Nos. 9 and 10. Power specifications are as follows:
 - 100 to 240 VAC, 50/60 Hz, approx. 15 VA
 - or
 - 24 VAC, 50/60 Hz, approx. 12 VA
 - 24 VDC, 8W

Sensor input

10	21	22	20
9			19
8			18
7			17
6			16
5			15
4			14
3			13
2			12
1	23		11

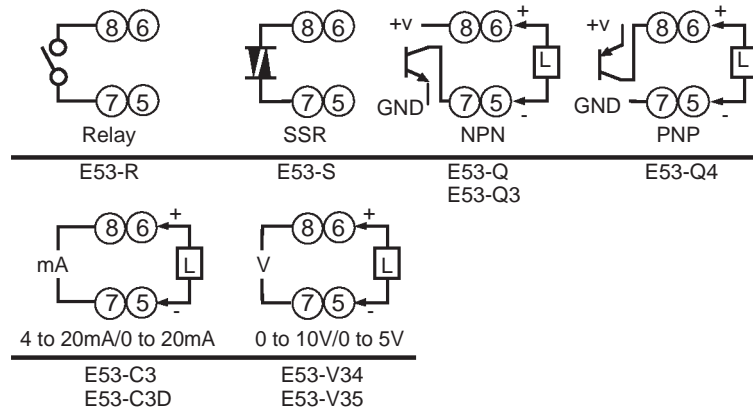
- Connect the sensor input to terminal Nos. 11 to 14 and 23 as follows according to the input type.



Control output

10	21	22	20
9			19
8			18
7			17
6			16
5			15
4			14
3			13
2			12
1	23		11

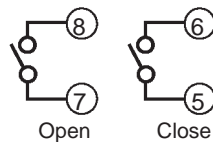
- Terminal Nos. 7 and 8 are for control output 1 (OUT1), and terminal Nos. 5 and 6 are for control output 2 (OUT2). The following diagrams show the available output units and their internal equalizing circuits.



- With E53-V□□ output units, about 2 V is output for one second after the power is interrupted.
- The following table shows the specifications for each output unit.

Model	Output Type	Output Mode	Specifications
E53-R	Relay	Pulse	250 VAC, 5 A
E53-S	SSR	Pulse	75 to 250 VAC, 1 A
E53-Q E53-Q3 E53-Q4	Voltage (NPN) Voltage (NPN) Voltage (PNP)	Pulse Pulse Pulse	NPN : 12 VDC, 40 mA (with short-circuit protection) NPN : 24 VDC, 20 mA (with short-circuit protection) PNP : 24 VDC, 20 mA (with short-circuit protection)
E53-C3 E53-C3D	4 to 20 mA 0 to 20 mA	Linear Linear	4 to 20 mA, Permissible load impedance: 600 Ω max., Resolution: Approx. 2600 0 to 20 mA, Permissible load impedance: 600 Ω max., Resolution: Approx. 2600
E53-V34 E53-V35	0 to 10 V 0 to 5 V	Linear Linear	0 to 10 VDC, Permissible load impedance: 1 kΩ min., Resolution: Approx. 2600 0 to 5 VDC, Permissible load impedance: 1 kΩ min., Resolution: Approx. 2600

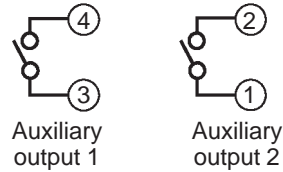
- With E5EK-TPRR2 controllers, relay output (250 VAC, 1A) is fixed. When the output unit is replaced, use the E53-R. The following diagrams show the relationship between terminals and open/close relay terminal settings.



Auxiliary output

10	21	22	20
9			19
8			18
7			17
6			16
5			15
4			14
3			13
2			12
1	23		11

- Terminal Nos.3 and 4 are for auxiliary output 1 (SUB1) and terminal Nos.1 and 2 are for auxiliary output 2 (SUB2).
- The internal equalizing circuits for the auxiliary outputs are as follows:



- Output specifications are as follows:
SPST-NO, 250 VAC, 3 A

CT input/ Potentiometer

10	21	22	20
9			19
8			18
7			17
6			16
5			15
4			14
3			13
2			12
1	23		11

- When the HBA function on an E5EK-TAA2 controller is used, connect CT input (CT) to terminal Nos.15 and 17. When monitoring the valve opening on an E5EK-TPRR2 controller, connect the potentiometer (PTMR) to terminal Nos.15 to 17. Connect each of these inputs as follows:



- For details on CT inputs, see Appendix B, About Current Transformer (CT) Input.
- For details on the potentiometer, see the Instruction Manual for the valve connected to the controller.

The meaning of terminal symbols is as follows:

O: OPEN, W: WIPE, C: CLOSE

The variable resistance range is 100 Ω to 2.5 k Ω



About Isolation

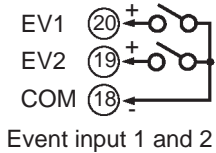
The E5EK-T has independent power supplies for each of the terminal blocks shown on the right.

A		B/C		C
	10	21	22	20
	9			19
B	8			18
	7			17
	6			16
	5			15
E	4			14
	3			13
	2			12
	1	23		11
F		D		

Event input

10	21	22	20
9			19
8			18
7			17
6			16
5			15
4			14
3			13
2			12
1	23		11

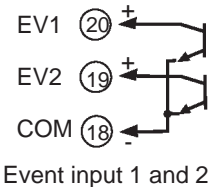
- Connect event inputs 1 and 2 (EV1/2) to terminal Nos.18 to 20. However, note that terminal Nos.18 to 20 cannot be used on controllers supporting the communications function.
- Connect the event inputs as follows:



- Use event inputs under the following conditions:

Contact input	ON: 1 k Ω max., OFF: 100 k Ω min.
No-contact input	ON: residual voltage 1.5 V max., OFF: leakage current 0.1 mA max.

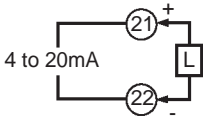
- Polarities during no-contact input are as follows:



Transfer output

10	21	22	20
9			19
8			18
7			17
6			16
5			15
4			14
3			13
2			12
1	23		11

- Connect transfer output (TRSF) to terminal Nos. 21 and 22.
- The internal equalizing circuit for transfer output is as follows:



- Transfer output specifications are as follows:
4 to 20 mA DC, Permissible load impedance: 600 Ω max., Resolution: Approx. 2600

Communications

- Terminal Nos.18 to 20, 21 and 22 can be used only on controllers that support the communications units (E53-AK01/02/03).
- For details on wiring, see Chapter 6, Using the Communications Function.