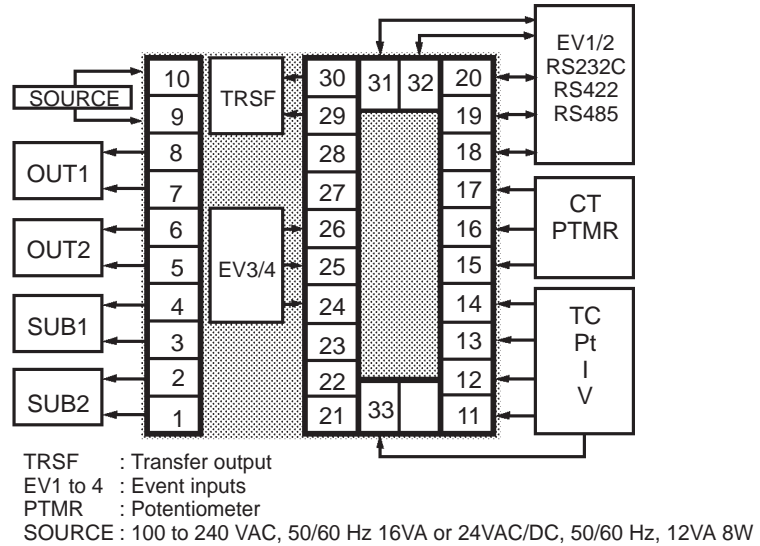


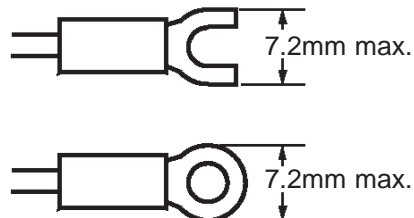
Wiring Terminals

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

10		30	31	32	20
9		29			19
8		28			18
7		27			17
6		26			16
5		25			15
4		24			14
3		23			13
2		22			12
1		21	33		11

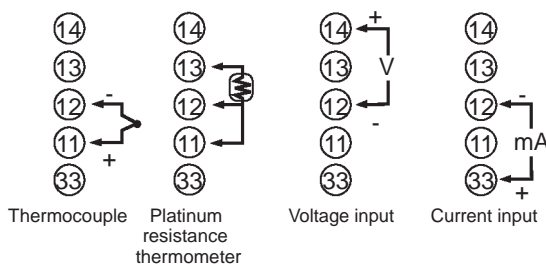
In the following wiring diagrams, the left side of the terminal Nos. indicates the inside of the controller.

- Input power to terminals Nos. 9 and 10. Power specifications are as follows:
 - 100 to 240 VAC, 50/60 Hz, approx. 16 VA
 - or
 - 24 VAC, 50/60 Hz, approx. 12 VA
 - 24 VDC, 8W

Sensor input

10		30	31	32	20
9		29			19
8		28			18
7		27			17
6		26			16
5		25			15
4		24			14
3		23			13
2		22			12
1		21	33		11

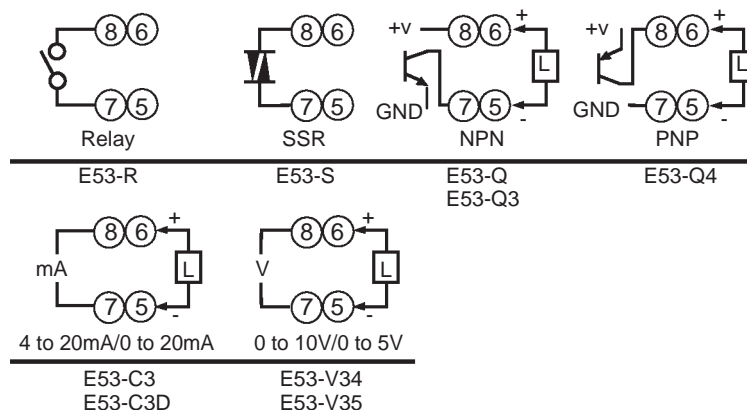
- Connect the sensor input to terminal Nos. 11 to 14 and 33 as follows according to the input type.



Control output

10		30	31	32	20
9		29			19
8		28			18
7		27			17
6		26			16
5		25			15
4		24			14
3		23			13
2		22			12
1		21	33		11

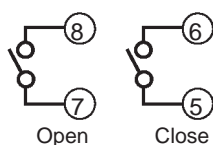
- Terminal Nos. 7 and 8 are for control output 1 (OUT1), and terminal Nos. 5 and 6 are for control output 2 (OUT2). The following diagrams show the available output units and their internal equalizing circuits.



- 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 E5AK-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.



10		30	31	32	20
9		29			19
8		28			18
7		27			17
6		26			16
5		25			15
4		24			14
3		23			13
2		22		12	
1		21	33		11

-
- Auxiliary output 1
- Auxiliary output 2

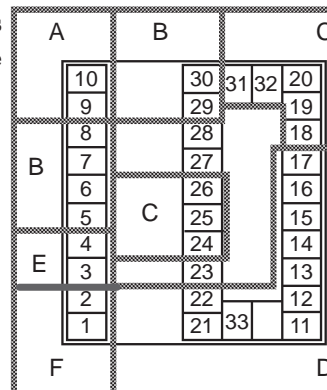
- | | | | | | |
|----|--|----|----|----|----|
| 10 | | 30 | 31 | 32 | 20 |
| 9 | | 29 | | | 19 |
| 8 | | 28 | | | 18 |
| 7 | | 27 | | | 17 |
| 6 | | 26 | | | 16 |
| 5 | | 25 | | | 15 |
| 4 | | 24 | | | 14 |
| 3 | | 23 | | | 13 |
| 2 | | 22 | | | 12 |
| 1 | | 21 | 33 | | 11 |

-
- The diagram shows two connection schemes for pins 15, 16, and 17. On the left, labeled 'CT input', a box labeled 'CT' has three output lines connecting to pins 17, 16, and 15. On the right, labeled 'Potentiometer', a potentiometer symbol is shown with its top terminal (labeled 'O') connected to pin 17, its wiper terminal (labeled 'W') connected to pin 16, and its bottom terminal (labeled 'C') connected to pin 15.

- The variable resistance range is 100 Ω to 2.5 k Ω



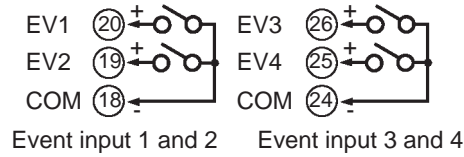
The E5AK-T has independent power supplies for each of the terminal blocks shown on the right.



Event input

10		30	31	32	20
9		29			19
8		28			18
7		27			17
6		26			16
5		25			15
4		24			14
3		23			13
2		22			12
1		21	33		11

- Connect event inputs 1 and 2 (EV1/2) to terminal Nos.18 to 20, and event events 3 and 4 (EV3/4) to terminal Nos.24 to 26. However, note that terminal Nos.18 to 20 cannot be used on controllers supporting the communications function.
- Connect the event inputs as follows:

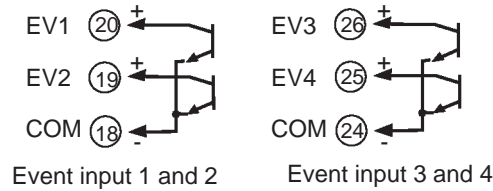


Terminal Nos.18 and 24 (COM) are connected internally.

- Use event inputs under the following conditions:

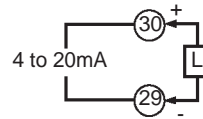
Contact input	ON: 1 k Ω max., OFF: 100 k Ω min.
No-contact input	ON: residual voltage 1.5 V max., OFF: leakage current 0.1 mA max.

- Polarities during no-contact input are as follows:



Transfer output

- Connect transfer output (TRSF) to terminal Nos. 29 and 30.
- 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, 31 and 32 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.

