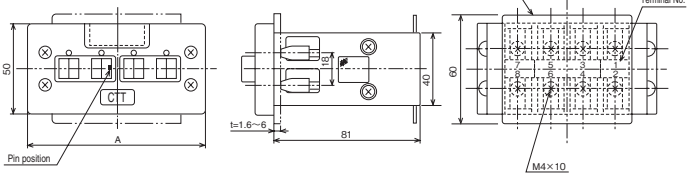
TEST TERMINALS

K-TYPE

STANDARD PRODUCTS (TERMINAL)

KTT-AW No. of poles – Color (For current)

– Circuit opening prevention type –

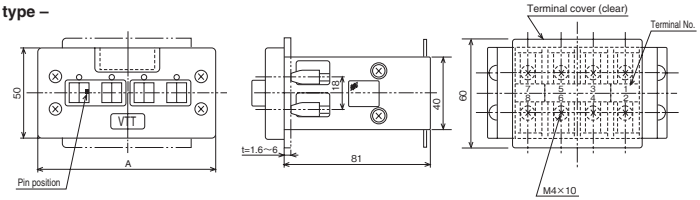


No. of poles	2	3	4	6	8
A	62	80	98	134	170

●Applicable plugs
KTQ-A□
KTP-A□

KTT-VW No. of poles – Color (For voltage)

– Circuit opening prevention type –

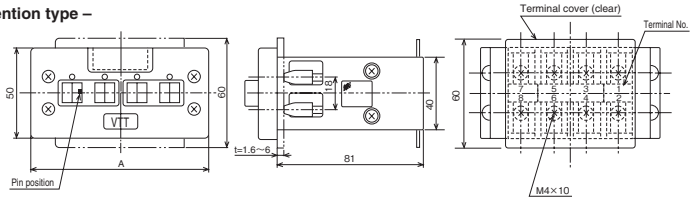


No. of poles	2	3	4	6
A	62	80	98	134

●Applicable plugs
KTQ-V□
KTP-V□

KTT-VS No. of poles – Color (For voltage)

– Power-source contact prevention type –



No. of poles	2	3	4	6
A	62	80	98	134

●Applicable plugs
KTP-V□

■Combinations of test terminals and plugs, and applications

Test terminal	Test plug	Application
KTT-AW□	KTQ-A□, KTP-A□	Combination of circuit disconnection prevention types (Recommendation)
KTT-VW□	KTQ-V□, KTP-V□	
KTT-VS□	KTQ-V□	
KTT-VS□	KTP-V□	Combination of power-source contact prevention types (Recommendation)

* The symbols in the □ represent the number of poles: 2, 3, 4, 6, or 8.

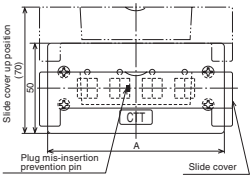
⚠ Precautions on use

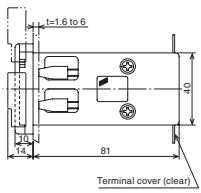
- To insert a test plug, be sure to lock the relay.
- If another power source is used when a voltage circuit is tested, select the combination of KTT-VS □ and KTP-V□ to prevent any contact with the test power source.
- In order to prevent any contact with the test power source, be sure to turn OFF the power switch when inserting a plug.
- For the purpose of preventing a momentary circuit disconnection. Combination of KTT-AW□ and KTQ-A□ are recommended for high contact reliability.

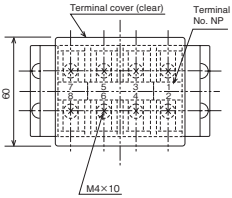
SLIDE COVER MODELS (TERMINAL)

KTT-AW [No. of poles] – [Color] (For current)

– Circuit open prevention type –





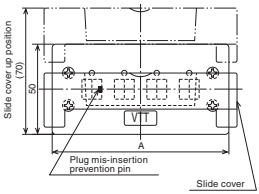


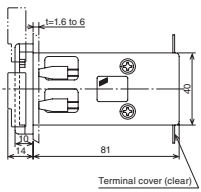
No. of poles	2	3	4	6	8
A	62	80	98	134	170

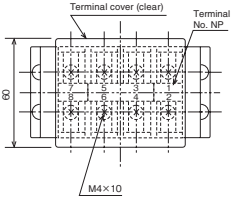
●Recommended plug type
KTQ-A□
KTP-A□

KTT-VW [No. of poles] – [Color] M (For voltage)

– Circuit open prevention type –





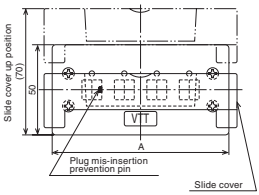


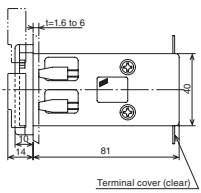
No. of poles	2	3	4	6
A	62	80	98	134

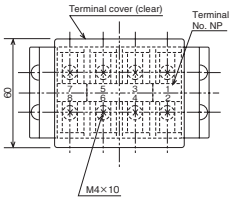
●Recommended plug type
KTQ-V□
KTP-V□

KTT-VS [No. of poles] – [Color] M (For voltage)

– Power source contact prevention type –







No. of poles	2	3	4	6
A	62	80	98	134

●Recommended plug type
KTP-V□

■Combinations of test terminals and plugs, and applications

Test terminal	Test plug	Application
KTT-AW□	KTQ-A□, KTP-A□	Combination of circuit disconnection prevention types (Recommendation)
KTT-VW□	KTQ-V□, KTP-V□	
KTT-VS□	KTQ-V□	
KTT-VS□	KTP-V□	Combination of power-source contact prevention types (Recommendation)

* The symbols in the □ represent the number of poles: 2, 3, 4, 6, or 8.

⚠ Precautions on use

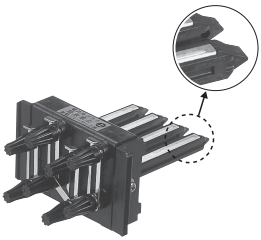
- To insert a test plug, be sure to lock the relay.
- If another power source is used when a voltage circuit is tested, select the combination of KTT-VS □ and KTP-V□ to prevent any contact with the test power source.
- In order to prevent any contact with the test power source, be sure to turn OFF the power switch when inserting a plug.
- For the purpose of preventing a momentary circuit disconnection. Combination of KTT-AW□ and KTQ-A□ are recommended for high contact reliability.

TEST TERMINALS

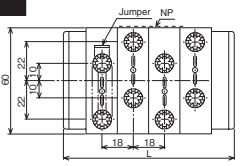
K-TYPE

STANDARD PRODUCTS (PLUG)

KTP-A No. of poles (For current)

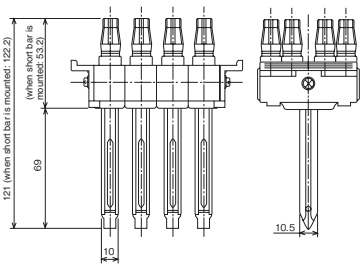


Short conductive portion on plug top

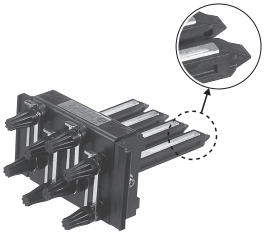


●Applicable terminal
KTT-AW□

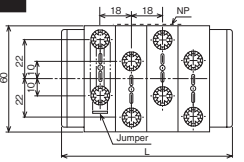
No. of poles	2	3	4	6	8
L	62	80	98	134	170



KTP-V No. of poles (For voltage)

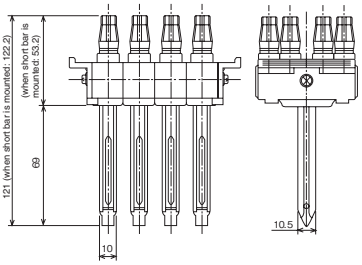


Short conductive portion on plug top

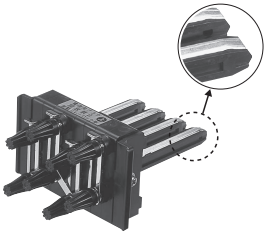


●Applicable terminal
KTT-VS□ (Recommended)
KTT-VW□

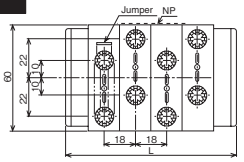
No. of poles	2	3	4	6
L	62	80	98	134



KTQ-A No. of poles (For current)

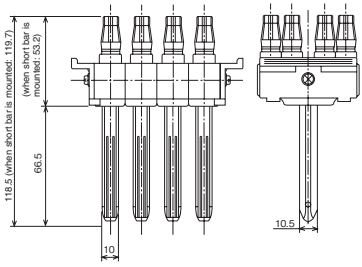


Long conductive portion on plug top

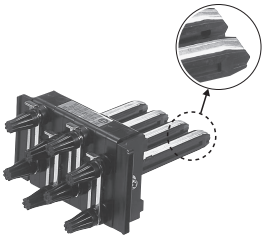


●Applicable terminal
KTT-AW□

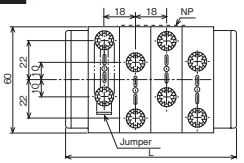
No. of poles	2	3	4	6	8
L	62	80	98	134	170



KTQ-V No. of poles (For voltage)

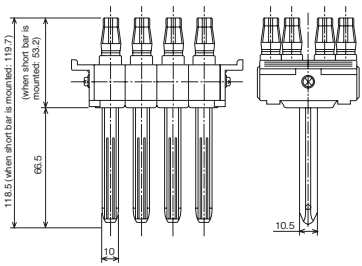


Long conductive portion on plug top



●Applicable terminal
KTT-VS□
KTT-VW□ (Recommended)

No. of poles	2	3	4	6
L	62	80	98	134



JUMPERS SUPPLIED WITH TEST PLUGS

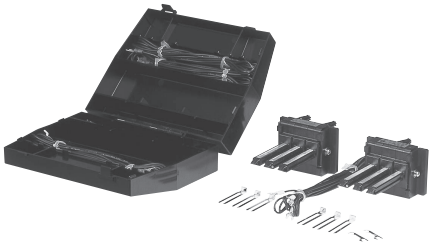
KT jumper A (Vertical jumper) KT jumper B (Horizontal jumper)

The quantities of jumpers supplied are shown as below:

Model / Pole / Jumper	KTP-A / KTQ-A					KTP-V / KTQ-V			
	2P	3P	4P	6P	8P	2P	3P	4P	6P
KT jumper A	2	3	4	6	8	2	3	4	6
KT jumper B	1	2	3	5	7	—	—	—	—

ACCESSORIES

Plug case set

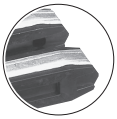


Box set for KTPB plugs

Model	Description	
KTPB-A2-V2	KTP-A2 KTP-V2 Red, white wire	1 piece 1 piece 4 pieces each
KTPB-A3-V3	KTP-A3 KTP-V3 Red, white, blue wire	1 piece 1 piece 4 pieces each
KTPB-A4-V4	KTP-A4 KTP-V4 Red, black, white, blue wire	1 piece 1 piece 4 pieces each
KTPB-A6	KTP-A6 Red, white, blue wire	1 piece 2 pieces of 2 each
KTPB-V6	KTP-V6 Red, white, blue wire	1 piece 2 pieces of 2 each
KTPB-A8	KTP-A8 Red, black, white, blue wire	1 piece 2 pieces of 2 each
KTB	Plug case only. *Only 2 plugs can fit. Max. 8 poles Example) 2P+6P, 4P+4P	
KTB case 8P	Plug case for 8 poles Plug case only	

*Jumpers are included.
*Set of KTP and KTQ is also available.

Box set for KTQB plugs

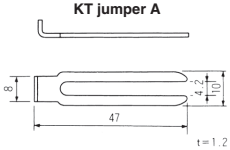


Model	Description	
KTQB-A2-V2	KTQ-A2 KTQ-V2 Red, white wire	1 piece 1 piece 4 pieces each
KTQB-A3-V3	KTQ-A3 KTQ-V3 Red, white, blue wire	1 piece 1 piece 4 pieces each
KTQB-A4-V4	KTQ-A4 KTQ-V4 Red, black, white, blue wire	1 piece 1 piece 4 pieces each
KTQB-A6	KTQ-A6 Red, white, blue wire	1 piece 2 pieces of 2 each
KTQB-V6	KTQ-V6 Red, white, blue wire	1 piece 2 pieces of 2 each
KTQB-A8	KTQ-A8 Red, black, white, blue wire	1 piece 2 pieces of 2 each
KTB	Plug case only. *Only 2 plugs can fit. Max. 8 poles Example) 2P+6P, 4P+4P	
KTB case 8P	Plug case for 8 poles Plug case only	

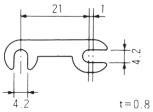
*Jumpers are included.
*Set of KTP and KTQ is also available.

Jumper

KT jumper A



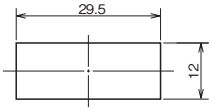
KT jumper B



●Jumpers are supplied as standard equipment.

Nameplate for usage display [common to KTT and ATT]

(Ordering unit: 100 pieces)



●The material is single-side coated paper (white).

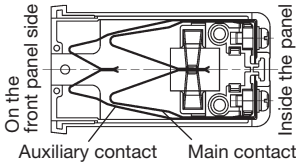
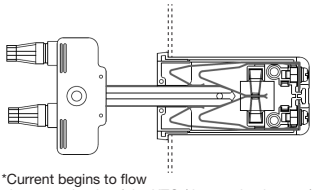
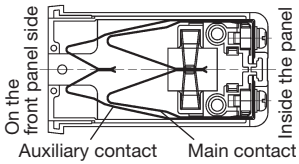
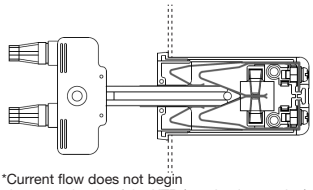
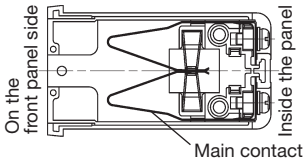
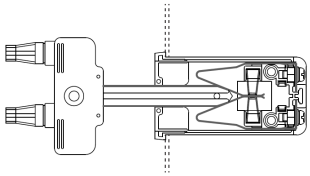
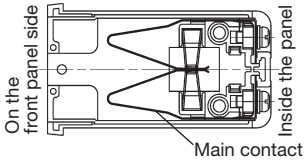
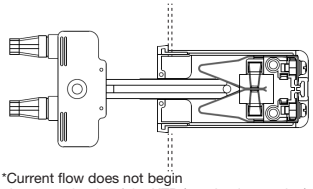
Indicated character	Plain
Type	KT mark

Explanatory Materials on the Applications

【Overview】

The following explains the structure of K-type test terminals and their various applications based on different configurations.

■Structure

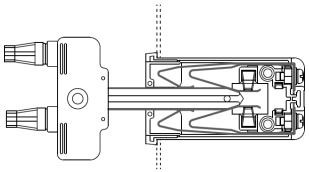
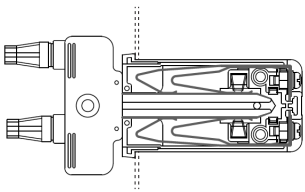
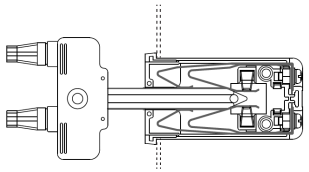
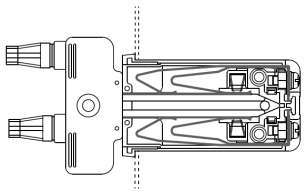
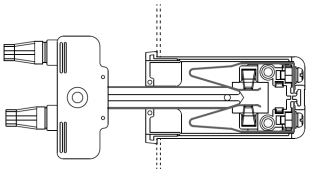
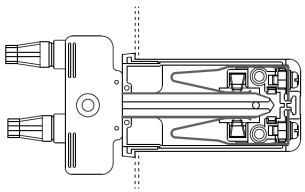
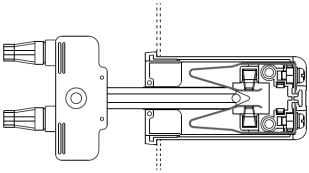
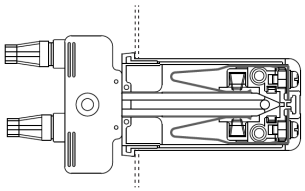
	Test terminal	Test plug	Operation①
Current measurements/ Voltage measurements	KTT-AW□, KTT-VW□: Double contact 	KTQ-A□, KTQ-V□: Long conductive portion on plug top 	 *Current begins to flow between the tip of the KTQ (the conductive part) and the main contact.
	KTT-AW□, KTT-VW□: Double contact 	KTP-A□, KTP-V□: Short conductive portion on plug top 	 *Current flow does not begin between the tip of the KTP (conductive portion) and the main contact.
Voltage measurements	KTT-VS□: Single contact 	KTQ-V□: Long conductive portion on plug top 	 *Electrical contact begins between the tip of the KTQ (conductive portion) and the main contact.
	KTT-VS□: Single contact 	KTP-V□: Short conductive portion on plug top 	 *Current flow does not begin between the tip of the KTP (conductive portion) and the main contact.

■Combinations of test terminals and plugs, and applications

Test terminal	Test plug	Application
KTT-AW□	KTQ-A□, KTP-A□	Combination of circuit disconnection prevention types (Recommendation)
KTT-VW□	KTQ-V□, KTP-V□	
KTT-VS□	KTQ-V□	
KTT-VS□	KTP-V□	Combination of power-source contact prevention types (Recommendation)

* The symbols in the □ represent the number of poles: 2, 3, 4, 6, or 8.

# of Type K Test Terminals

	Operation②	Operation③	Operating description
	 *Although the main contact is open, the circuit remains closed because the auxiliary contact and the main contact are in contact with KTQ.	 *Insertion complete	①As the KTQ is inserted, the auxiliary contact opens and establishes a connection with the KTQ. ②After the tip (conductive portion) of the KTQ and the main contact make contact, the main contact opens. ③The circuit from KTT to KTQ is configured. **→Protect from open-circuit.**
	 *Although the main contact opens, the circuit does not open because the auxiliary contact is connected to KTP.	 *Insertion complete	①As the KTP is inserted, the auxiliary contact opens and establishes a connection with the KTP. ②The main contact opens before the tip of the KTP (conductive portion) and the main contact make contact. ③The circuit from KTT to KTP is configured. **→Protect from open-circuit.**
	 *Although the main contacts are open, the circuit remains closed because they are connected to KTQ.	 *Insertion complete	①As the KTQ is inserted, the tip of the KTQ (the conductive part) makes contact with the main contact, establishing an electrical connection. ②After the tip (conductive portion) of the KTQ and the main contact make contact, the main contact opens. ③The circuit from KTT to KTQ is configured. **→Protect from open-circuit.**
	 *The main contacts open, and the circuit is opened.	 *Insertion complete	①There is no electrical connection between the tip of the KTP (the conductive part) and the main contact. ②The main contact opens before the tip of the KTP (conductive portion) and the main contact make contact. ③The circuit from KTT to KTP is configured. **→Protect from cross-connection.**

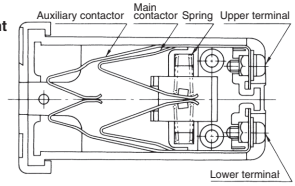
* " ——— " indicates the conductive part.

TEST TERMINALS

K-TYPE

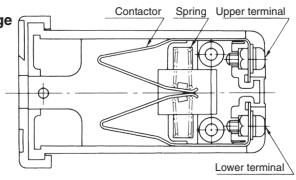
STRUCTURES AND EACH COMBINATION CHARACTERISTIC

Diagram of contactor for current (KTT-AW□)



When a plug is inserted and the auxiliary contactor is opened, the main contactor will not be opened. The auxiliary contactor closes before the plug releases the main contactor.
Either the auxiliary contactor or the main contactor always make circuit with a plug, preventing the CT circuit opening.

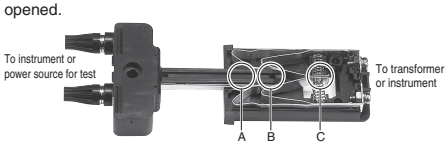
Diagram of contactor for voltage (KTT-VS□)



When the plug is inserted, the contactor is opened. This state will be maintained until the contactor makes contact with the contact point of the plug. This eliminates the possibility of making contact with the power source.

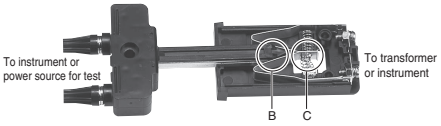
■Combination of KTT-AW and KTQ (Recommended)

The KTT-AW terminal has a dual-contactor structure consisting of main and auxiliary contactors. In addition, the KTQ plug has a long conductive part for contact up to its leading end. Therefore, when the plug is inserted, the contact is completed at two contacts (A) and (B) before the contact (C) of the terminal is opened. Thus, this combination provides excellent function for preventing the circuit from being opened.



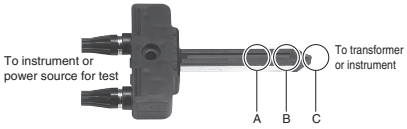
■Combination of KTT-VS and KTP (Recommended)

The KTT-VS has a single-contactor structure consisting of a main contactor only. The KTP has a long conductive part for contact up to 10 mm before its leading end (the leading 10 mm part is an insulator). When the plug is inserted, the contact (C) of the terminal is opened before the contact (B) is closed. Therefore, even if another power source is inserted from the plug when the plug is inserted or removed, there will be no possibility of making contact with the power source. However, when the circuit voltage is measured with a test instrument, the relay will malfunction due to the momentary disconnection of the circuit. For this reason, the relay must be locked.



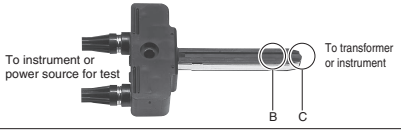
■Combination of KTT-AW and KTP

The KTT-AW has a dual-contactor structure consisting of main and auxiliary contactors. The KTP plug has a shorter conductive part for contact than the KTQ. However, when it is inserted, the contact (A) of the terminal is closed before the contact (C) is opened (the contact (B) starts being closed after the contact (C) has been opened).

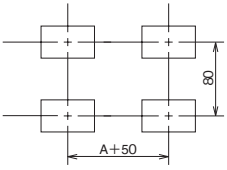


■Combination of KTT-VS and KTQ (special combination)

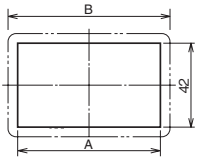
The KTT-VS has a single-contactor structure consisting of a main contactor only. However, the KTQ has a long conductive part for contact up to its leading end. Therefore when the plug is inserted, the contact (B) of the terminal is closed before the contact (C) is opened.
This ensures that the circuit never be opened when the plug is inserted or removed. Therefore, when the circuit voltage is measured using a test instrument, the relay will not malfunction due to the momentary disconnection of the circuit. However, if you try to insert another power source from the plug, a temporary connection with the power source will occur.



PANEL CUTOUT DIMENSIONS



(Min. mounting pitch)

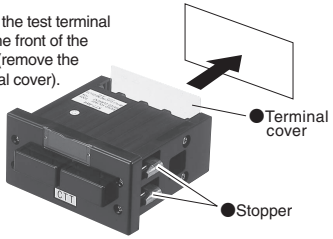


Size	2P	3P	4P	6P	8P
A	54	72	90	126	162
B	62	80	98	134	170

DIRECTIONS FOR MOUNTING

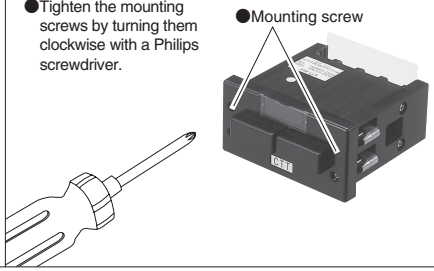
■Mounting procedure

●Mount the test terminal from the front of the panel (remove the terminal cover).



(Take care so that the stoppers do not hit against any panel edge.)

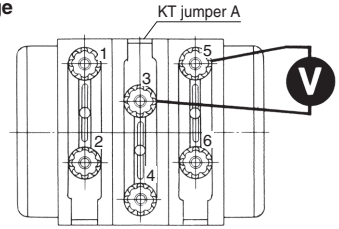
●Tighten the mounting screws by turning them clockwise with a Philips screwdriver.



OPERATING INSTRUCTIONS

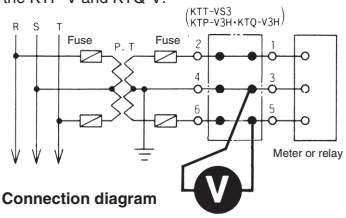
■Measuring current and voltage

Voltage



1. Short-circuit each phase (each set of the upper and lower terminals represents the same phase) with the KT jumper A.
2. Connect a voltmeter circuit between the phases to be measured.
3. After the connection, insert the plug into the terminal.

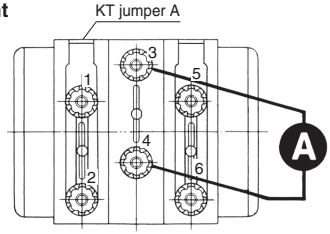
Note: Be sure not to insert the plug with wrong phases short-circuited because it is dangerous to short-circuit PT secondary circuit. The KT jumper B (for short-circuiting different phases) does not come with the KTP-V and KTQ-V.



Connection diagram

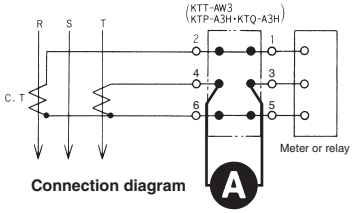
∗ When inserting the plug, take care not to touch with the short bar or other.

Current



1. Connect an ammeter circuit between the poles to be measured.
2. Short-circuit the other phases with the KT Jumper A.
3. After the connection, insert the plug.

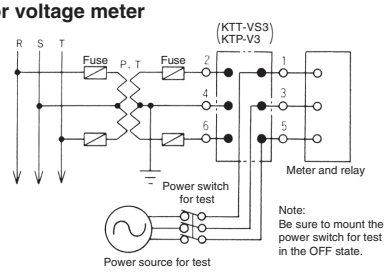
Note: Opening the CT circuit creates a dangerous situation. Be sure to avoid inserting the plug without ensuring the proper connection.
Be sure to avoid inserting the plug with wrong connection because it is dangerous to open CT circuit.



Connection diagram

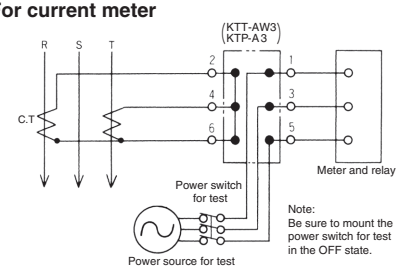
■Calibrating a meter and testing a relay with the test power source

For voltage meter

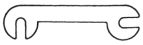


1. Connect the power source for test to the upper terminal screw on the plug for voltage.
2. Connect nothing to the lower terminals to keep it open.
3. After the connection, insert the plug into the test terminal and then carry out calibration and others.

For current meter



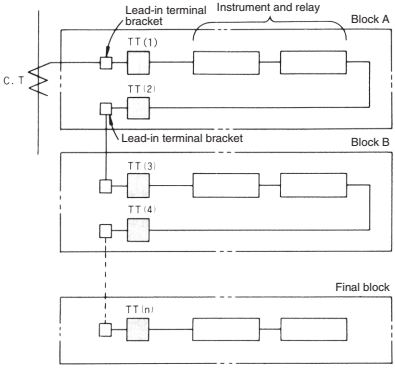
1. Connect the power source for test to the upper terminal screw on the plug for current.
2. Connect the KT jumper B to the lower terminal to prevent the CT circuit from being opened.
3. After the connection, insert the plug into the test terminal and then carry out calibration and others.

KT jumper B 

∗ Note: Before connecting the power source for test, carefully check that it is connected to the correct terminals (not the vertically reverse ones). To inset the plug, be sure to turn OFF the power switch.

■Checking for electrical discontinuity or breakdown in internal wiring of board

Secondary side of current transformer

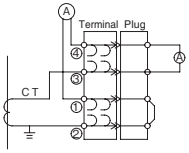
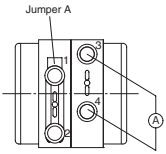
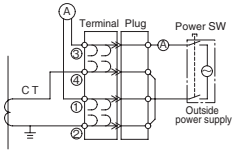
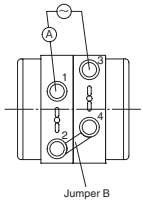
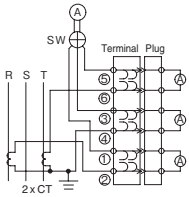
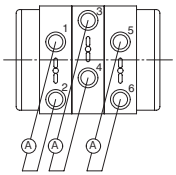
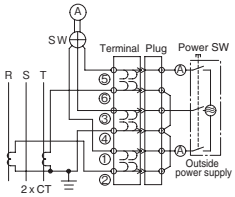
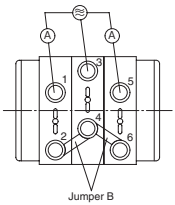
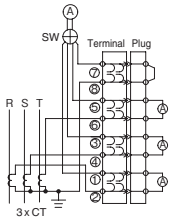
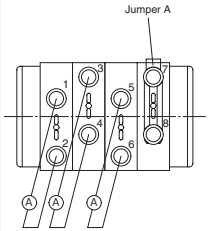
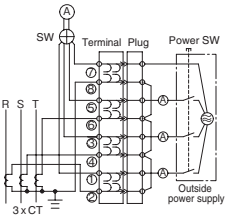
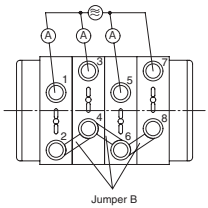


1. Connect an insulation-resistance meter between the test plugs TP(1) and TP(2).
2. Insert the connected plug into the test terminal TT(1) and TT(2), and then measure the block A.
3. Similarly, measure the block B to the final block.
4. Insulation resistance for each block can be measured.

∗ Note: Before inserting the plugs, short-circuit all the terminals on the entire primary side of the current transformer with the KT jumper B.

WIRING INSTRUCTION

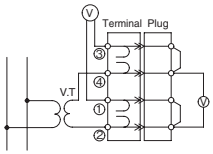
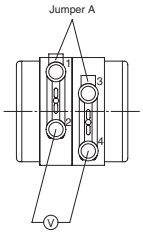
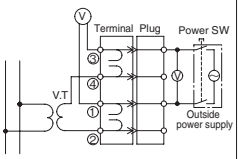
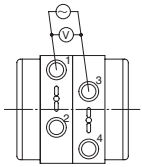
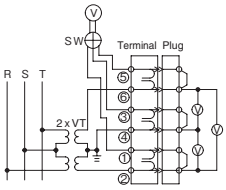
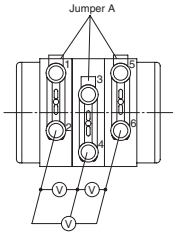
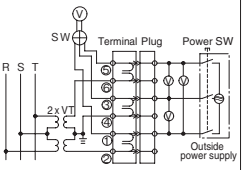
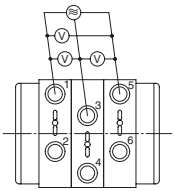
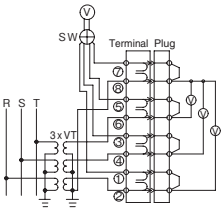
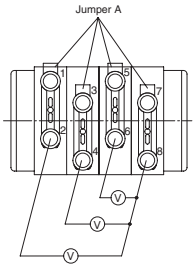
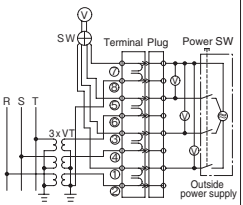
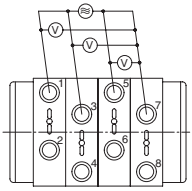
Terminal: KTT-AW
Plug: KTP-A / KTQ-A

CT 1 unit Secondary output measurement		CT 1 unit Current calibration	
Circuit	Connecting position	Circuit	Connecting position
			
CT 2 units Secondary output measurement		**CT 2 units Current calibration**	
Circuit	Connecting position	Circuit	Connecting position
			
CT 3 units Secondary output measurement		**CT 3 units Current calibration**	
Circuit	Connecting position	Circuit	Connecting position
			

K-TYPE

WIRING INSTRUCTION

Terminal: KTT-VW / KTT-VS
Plug: KTP-V / KTQ-V

VT 1 unit Secondary output measurement		VT 1 unit Voltage calibration	
Circuit	Connecting position	Circuit	Connecting position
			
VT 2 units Secondary output measurement		**VT 2 units Voltage calibration**	
Circuit	Connecting position	Circuit	Connecting position
			
VT 3 units Secondary output measurement		**VT 3 units Voltage calibration**	
Circuit	Connecting position	Circuit	Connecting position
			

* The above diagram shows KTT-VS as example.
* In case of KTT-VW, the mark will be ③ to ㉝.