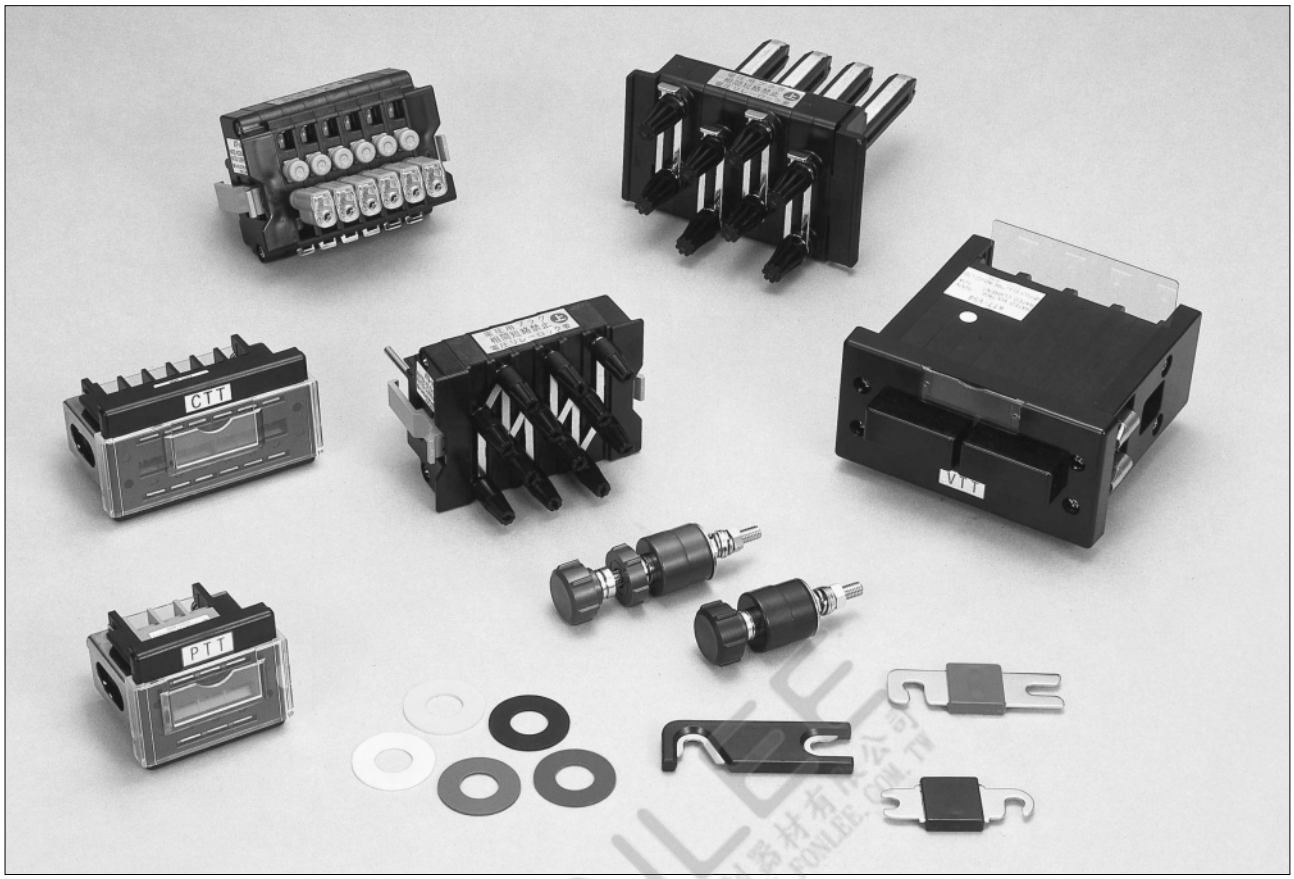
TEST TERMINALS

不二電機工業
FUJI ELECTRIC IND.



FEATURES

Simplified calibration and testing procedures

Our test terminals allow you to perform calibration and testing procedures with instrument and relays connected in place, resulting in great labor saving.

Broad range of applications

Our test terminals are available in a broad range of types including the stud type and insertion type to meet your current capacity requirements ranging from 5 to 30 A and your applications.

Safe structure

Our test terminals for CT circuits are designed to prevent the circuit from being opened. Both of the insertion type test terminals for PT and CT circuits assure safety with their structure that prevents wrong insertion.

High insulation and inflammability

For the housing material, high-performance engineering plastics is used to provide high insulation, inflammability, and impact resistance.

Protective treatment for use in tropical regions

To ensure high durability in harsh use under climatic conditions of tropical regions, special protective treatment is applied to some products, which are available in the same ratings, performance, and dimensions as those of the standard products.

SPECIFICATION (RATINGS AND PERFORMANCE)

Specification \ Type	B-TYPE	K-TYPE	A-TYPE
Rated insulation voltage	600 VDC, AC	500 VDC, AC	250 VDC, AC
Rated current	30 A	10 A	5 A
Max. connectable wire	8 mm^2	5.5 mm^2	2 mm^2
Withstand voltage	1 minute at 2,500 VAC		1 minute at 2,000 VAC
Lightning impulse	±7,000 V min. 1.2/50 µs		±3,000 V min. 1.2/50 µs
Operating ambient temperature	–25 to 50°C		–5 to 40°C
Insulation resistance	Insulation-resistance meter (1,000 VDC) 1,000 MΩ min.		Insulation-resistance meter (500 VDC) 1,000 MΩ min.
Overload capacity	1 second at 200 A AC		

●INSERTION TYPE

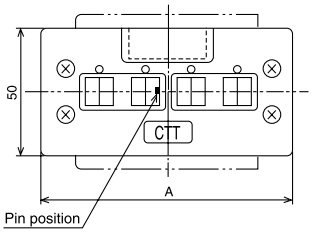
TEST TERMINALS

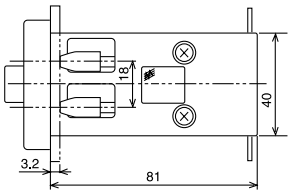
K-TYPE

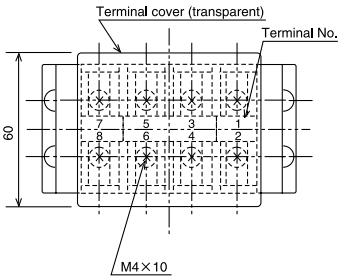
STANDARD MODELS (TERMINALS)

KTT-AW Number of poles - Color (For current)

– Circuit disconnection prevention type –





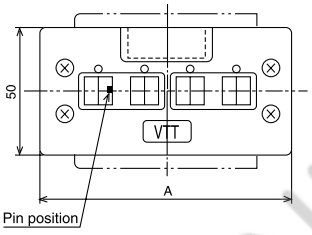


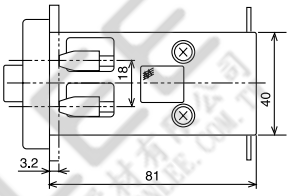
No. of poles	1	2	3	4	6	8
A-size	44	62	80	98	134	170

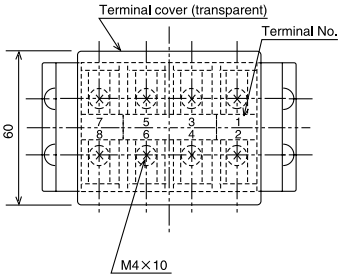
●Combinations with plugs
KTQ-A□
KTP-A□

KTT-VW Number of poles - Color (For voltage)

– Circuit disconnection prevention type –





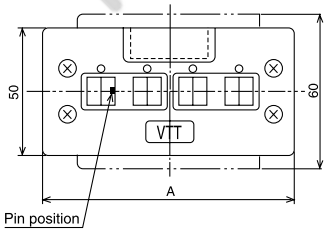


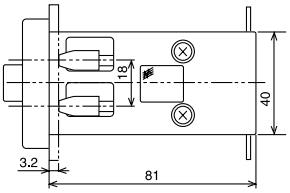
No. of poles	2	3	4	6
A-size	62	80	98	134

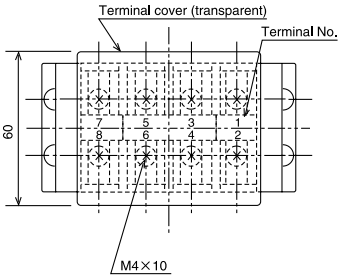
●Combinations with plugs
KTQ-V□

KTT-VS Number of poles - Color (For voltage)

– Power-source contact prevention type –







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

●Combinations with plugs
KTP-V□

■ Combinations of test terminals and plugs, and applications

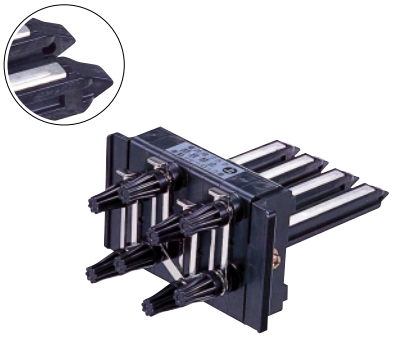
Test terminal	Test plug	Application
KTT-AW□	KTQ-A□	Combination of circuit disconnection prevention types (highly reliable)
	KTP-A□	Combination of circuit disconnection prevention types (highly reliable)
KTT-VW□	KTQ-V□	Combination of circuit disconnection prevention types (highly reliable)
KTT-VS□	KTP-V□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

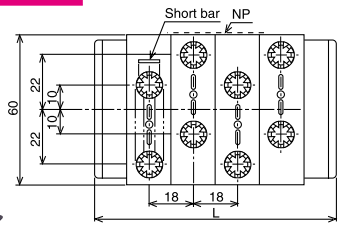
⚠Precautions on use

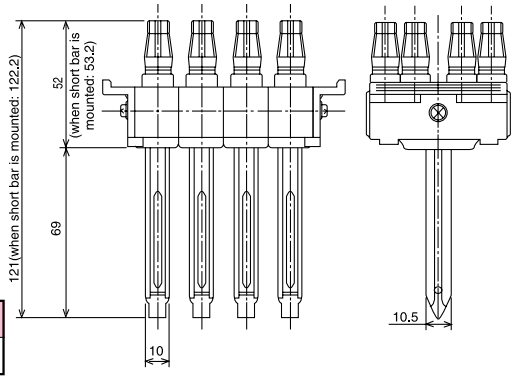
- To insert a test plug, be sure to lock the relay.
- If another power source is used when a voltage circuit is tested, select the combination of KTT-VS□ and KTP-V□to prevent any contact with the test power source.
- In order to prevent any contact with the test power source, be sure to turn OFF the power switch when inserting a plug.
- For the purpose of preventing a current circuit from momentary disconnection, KTT-AW□ and KTQ-A□ are combined for 2-point contact resulting in improved reliability.

STANDARD MODELS (PLUGS)

KTP-A Number of poles (For current)



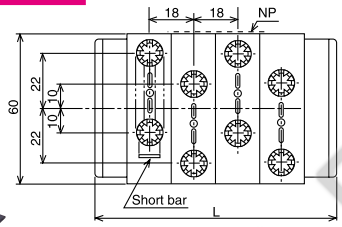


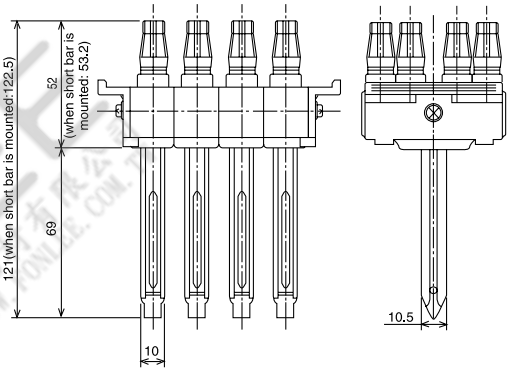


●Combinations with terminals
KTT-AW□

No. of poles	1	2	3	4	6	8
L-size	44	62	80	98	134	170

KTP-V Number of poles (For voltage)

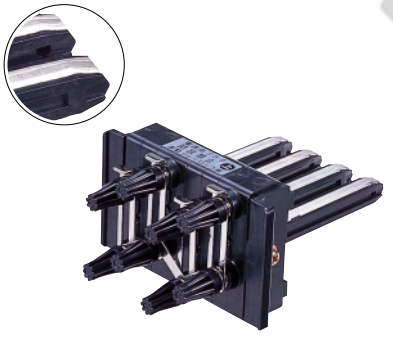


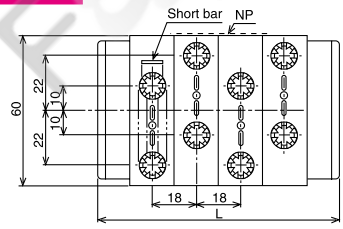


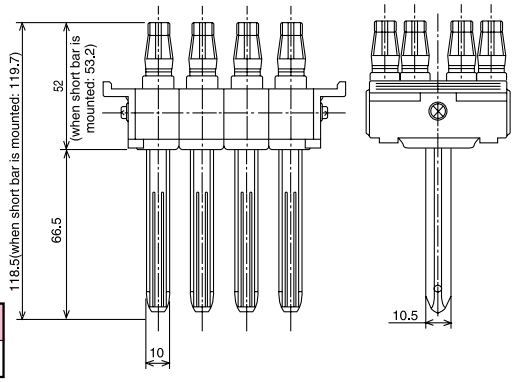
●Combinations with terminals
KTT-VS□

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

KTQ-A Number of poles (For current)



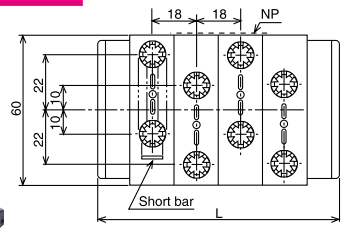


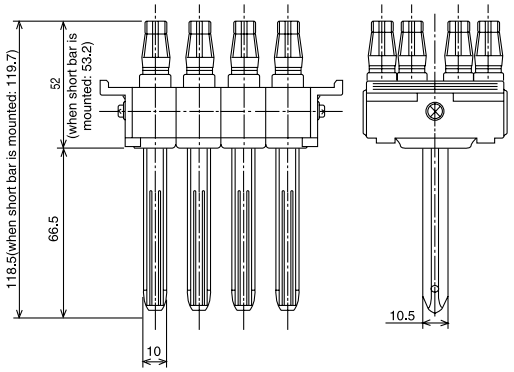


●Combinations with terminals
KTT-AW□

No. of poles	1	2	3	4	6	8
L-size	44	62	80	98	134	170

KTQ-V Number of poles (For voltage)





●Combinations with terminals
KTT-VW□

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

●INSERTION TYPE

TEST TERMINALS

K-TYPE

SHORT BARS SUPPLIED WITH TEST PLUGS

KT short bar A　　KT short bar B

The quantities of short bars supplied are as shown below:

Model / No. of poles / Short bar	KTP-A/KTQ-A						KTP-V/KTQ-V			
	1P	2P	3P	4P	6P	8P	2P	3P	4P	6P
KT short bar A	—	2	3	4	6	8	2	3	4	6
KT short bar B	—	1	2	3	5	7	—	—	—	—

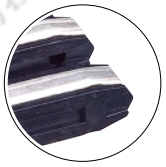
ACCESSORIES

Box set

■ Box set for KTPB plugs

Model	Description
KTPB-A2-V2	Combination of KTP-A2H and KTP-V2H; Each 4 pieces of red and white lead wires
KTPB-A2-V2	Combination of KTP-A3H and KTP-V3H; Each 4 pieces of red, white and blue lead wires
KTPB-A4-V4	Combination of KTP-A4H and KTP-V4H; Each 4 pieces of red, black, white and blue lead wires
KTPB-A6	KTP-A6H; Each 4 pieces of red, white and blue lead wires
KTPB-V6	KTP-V6H; Each 4 pieces of red, white and blue lead wires
KTPB-A8	KTP-A8H; Each 4 pieces of red, black, white and blue lead wires

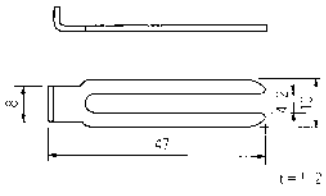
■ Box set for KTQB plugs



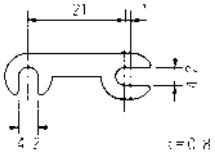
Model	Description
KTQB-A2-V2	Combination of KTQ-A2H and KTQ-V2H; Each 4 pieces of red and white lead wires
KTQB-A3-V3	Combination of KTQ-A3H and KTQ-V3H; Each 4 pieces of red, white and blue lead wires
KTQB-A4-V4	Combination of KTQ-A4H and KTQ-V4H; Each 4 pieces of red, black, white and blue lead wires
KTQB-A6	KTQ-A6H; Each 4 pieces of red, white and blue lead wires
KTQB-V6	KTQ-V6H; Each 4 pieces of red, white and blue lead wires
KTQB-A8	KTQ-A8H; Each 4 pieces of red, black, white and blue lead wires

Short bars

KT short bar A

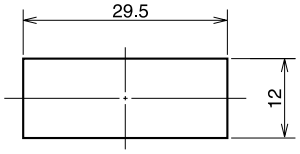


KT short bar B



●Short bars are shipped in the state of being assembled to plugs.

Usage ID seal [common to KTT and ATT]

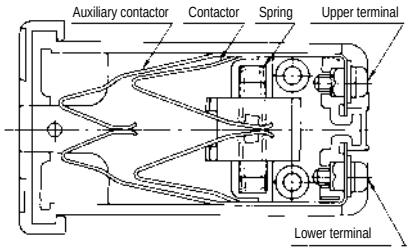


●The material is single-side coated paper (white).　(Ordering unit: 100 pieces)

Marking	CT secondary	PT secondary	GPT secondary	GPT third	CT2RY
	PT2RY	VT2RY	GPT2RY	GPT3RY	None

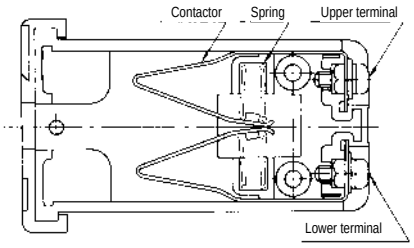
STRUCTURES AND ACTION OCCURRING IN EACH COMBINATION

Illustration 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 remains closed, preventing the CT circuit from being disconnected.

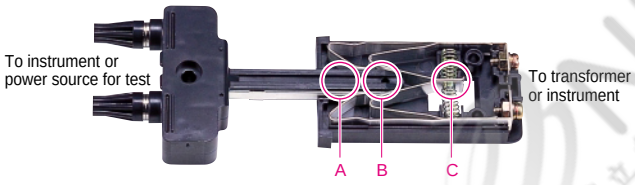
Illustration of contactor for voltage (KTT-VS□)



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.

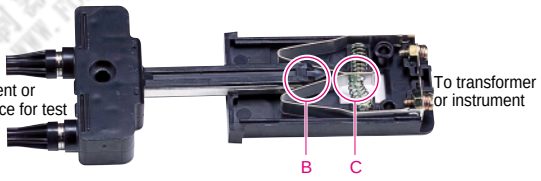
■ Combination of KTT-AW and KTQ

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.



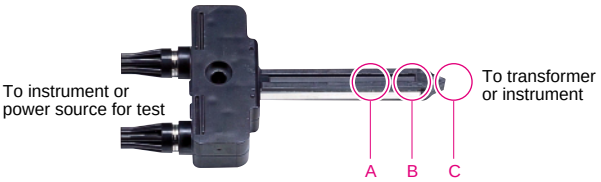
■ Combination of KTT-VS and KTP

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.



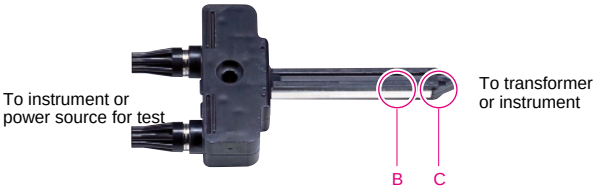
■ Combination of KTT-AW and KTP

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).

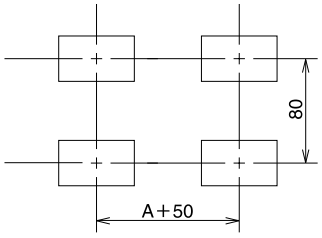


■ Combination of KTT-VS and KTQ (special combination)

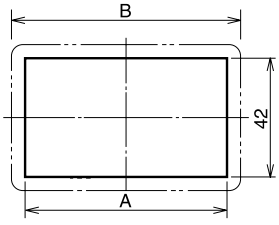
The KTT-VS has a single-contactor structure consisting of a main contactor only. However, the KTQ has a long conductive part for contact up to its leading end. Therefore when the plug is inserted, the contact (B) of the terminal is closed before the contact (C) is opened.
This ensures that the circuit 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	1P	2P	3P	4P	6P	8P
A	36	54	72	90	126	162
B	44	62	80	98	134	170

●INSERTION TYPE

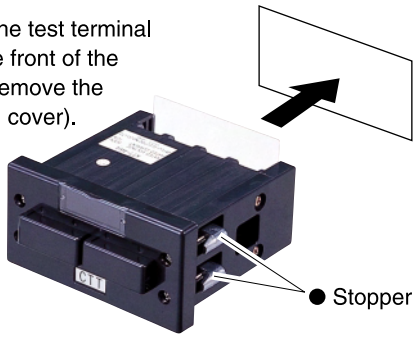
TEST TERMINAL

K-TYPE

DIRECTIONS FOR HANDLING

■Mounting procedure

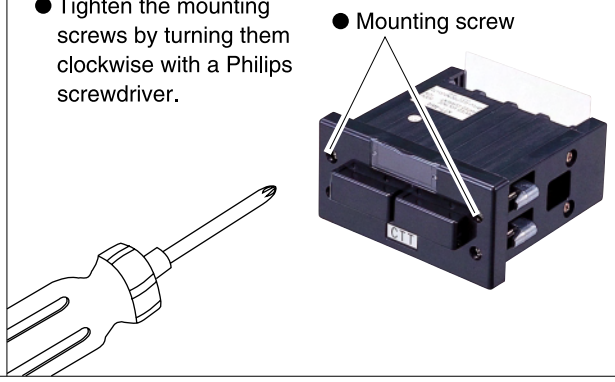
● Mount the test terminal from the front of the panel (remove the terminal cover).



(Take care so that the stoppers do not make contact with any panel edge.)

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

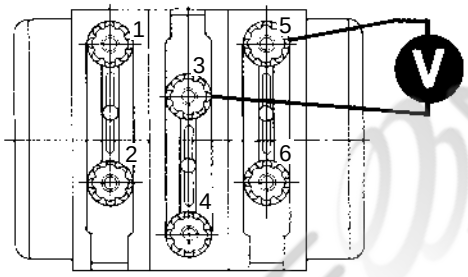
● Mounting screw



HANDLING AND TESTING

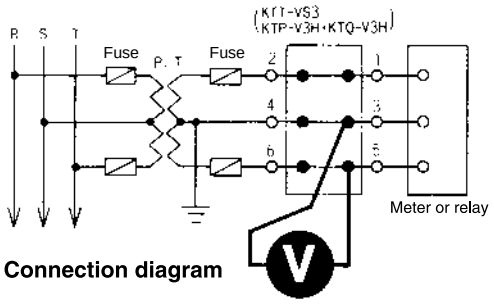
■Measuring current and voltage

Measuring voltage



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

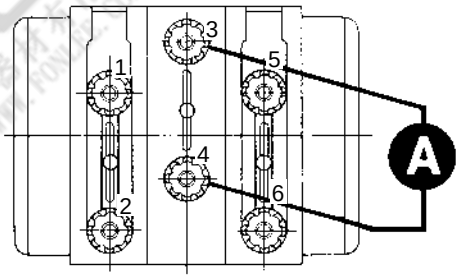
Note: Short-circuiting the PT secondary circuit creates a dangerous situation. Therefore, take care not to insert the plug when different phases are short-circuited by mistake. The KT short bar B (for short-circuiting different phases) does not come with the KTP-V and KTQ-V.



Connection diagram

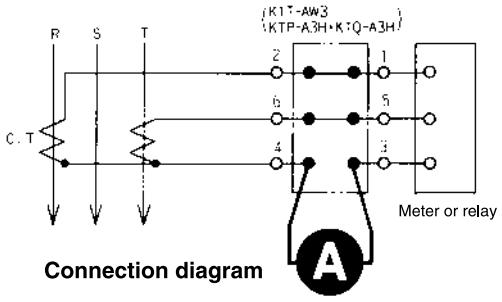
* When inserting the plug, take care not to let the plug make contact with the short bar or other.

Measuring current



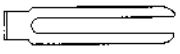
1. Connect an ammeter circuit between the poles to be measured.
2. Short-circuit the other phases with the KT short bar A.
3. After the connection has been completed, insert the plug.

Note: Opening the CT circuit creates a dangerous situation. Be sure to avoid inserting the plug without ensuring the proper connection.



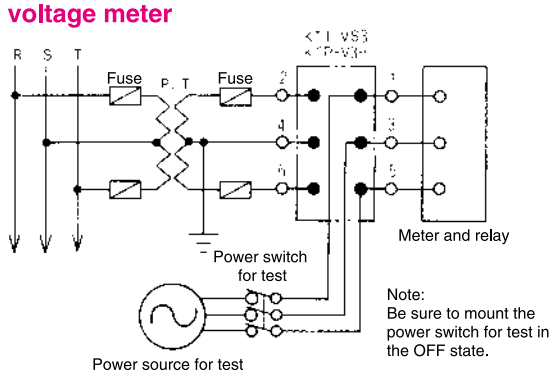
Connection diagram

KT short bar A



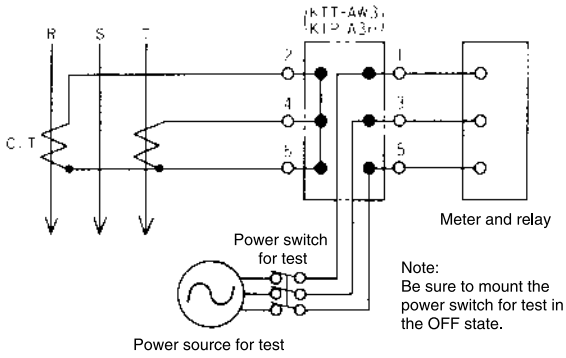
Calibrating a meter and testing a relay with the test power source

For voltage meter

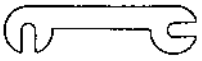


1. Connect the power source for test to the upper terminal screw on the plug for voltage.
2. Connect nothing to the lower terminal to keep it open.
3. After the connection has been completed, insert the plug into the test terminal and then carry out calibration and others.

For current meter



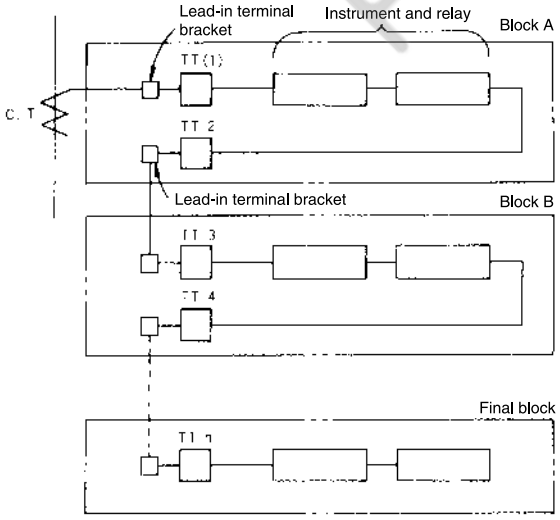
1. Connect the power source for test to the upper terminal screw on the plug for current.
2. Connect the KT short bar B to the lower terminal to prevent the CT circuit from being opened.
3. After the connection has been completed, insert the plug into the test terminal and then carry out calibration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

KT short bar B 

Note: Before connecting the power source for test, carefully check that it is being 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 switchboard

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 through the final block.
4. The result will clarify the insulation resistance in each block.

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