TSB Series: Test Block and Test Plugs

Introduction

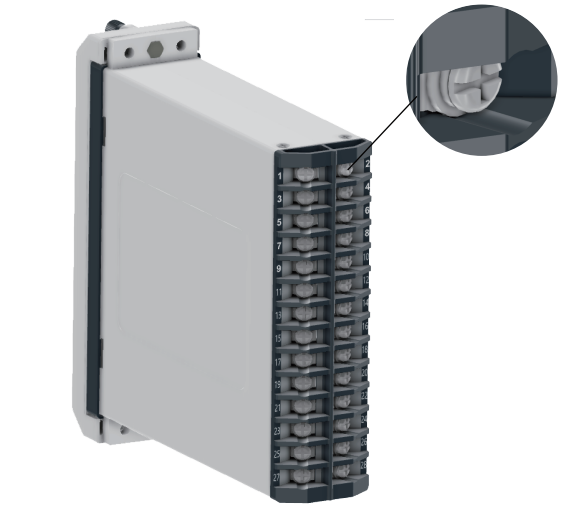


- TSB series test block and test plugs, provide safe, flexible and reliable access to any power system protection for monitoring;
- The flexibility of configuration makes the TSB series a convenient and universal test facility whilst assuring maximum user and system safety;
- The test block has been designed for use with the test plug,can be quickly isolated from the input-side trip signal. At the same time, it ensures reliable shorting of external CT;
- The test handle is designed with 28 jacks, allowing the connection of 4mm standard banana plugs.Among them, the 14 jacks on the odd-numbered side are used for the overload test of the protection device side, while the14 jacks on the even-numbered side are used for the reading and measurement on the liveside at one time;
- Test Plug has an anti-plugging structure and for all the different variants of Test Blocks;
- Test block includes 14 circuits.By the product ordering code the user can specify the number of circuits of each type.

- Cable up to 2.5mm² × 2;
- The maximum external diameter for the ring type terminals is 8.5mm;
- The screws are suitable for Phillips or flat -head screwdrivers;
- Odd-numbered sockets are for injection tests on the protection relay, while even-numbered sockets are for accessing the live-side.
- Standard torque: 0.5 Nm.

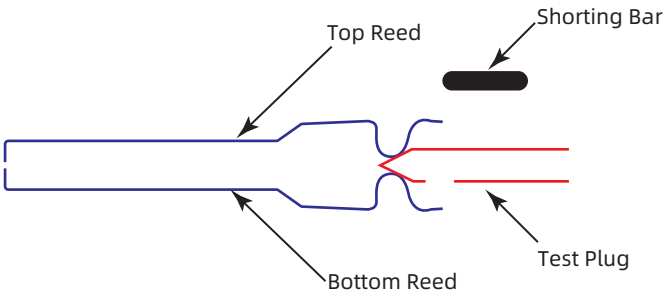
Safe contact disconnection sequence:

- cut off of tripping circuits;
- short circuit of the CTs;
- cut off Connection of voltage & current circuits;
- In case of current circuits an automatic short circuit mechanism is included to ensure the CT circuit is short-circuit before the contact in the test block opens;

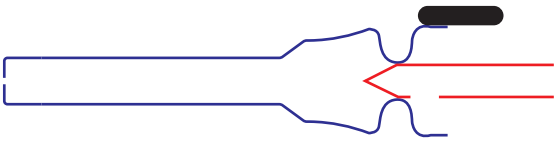


Back terminals of Test Block

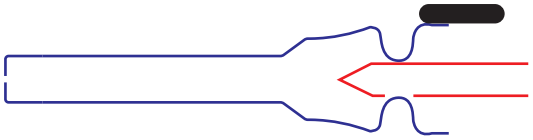
Four Stages of Connecting Test Plug



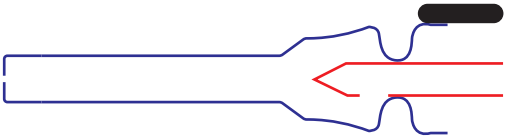
Test plug just opening cassette contacts.



The reeds are shorted and the top reed is shorted to the shorting bar

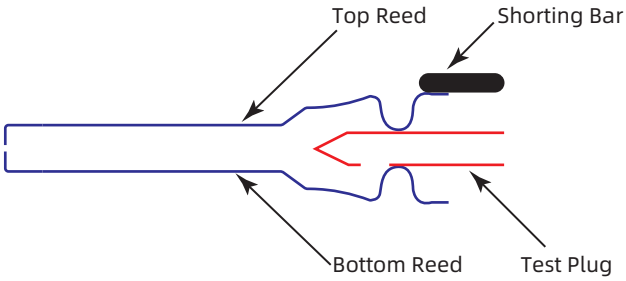


Test plug not fully inserted, the upper reed is shorted to the shorting bar and the bottom reed is disconnected

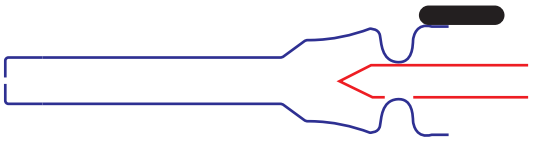


Test plug fully inserted, the upper reed is shorted to the shorting bar and the bottom reed is connected, ready to be tested

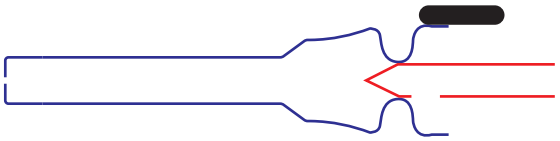
Removing CT Testing Modules



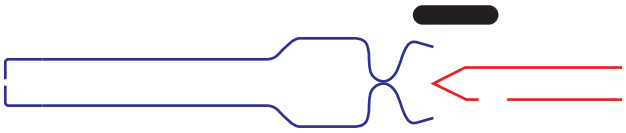
When the test plug is not removed, the upper reed is shorted to the shorting bar and the bottom reed is connected



Test plug not fully removed, the upper reed is shorted to the shorting bar and the bottom reed is disconnected

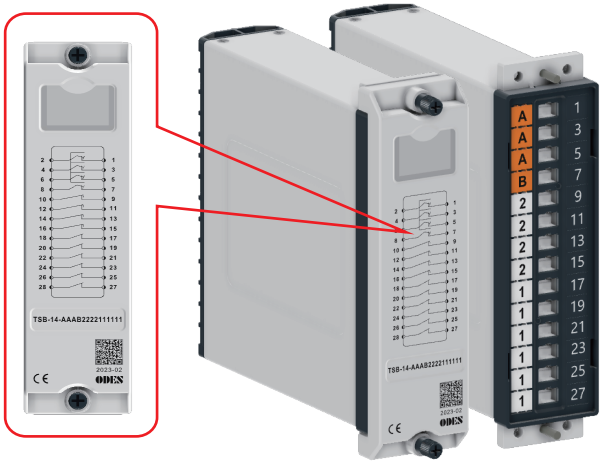


The reeds are shorted and the top reed is shorted to the shorting bar



Test plug fully removed, the reeds close

MMI of Test Block



- Vertical mounting;
- The information panel at the top of the protectivecover can be adjusted to display information required;
- Schematic diagram in the protective cover,sockets of odd number are for injection test on the protection relay,sockets of numbered accessing to live-side;
- The current loop is marked with an orange ribbon under the cover.

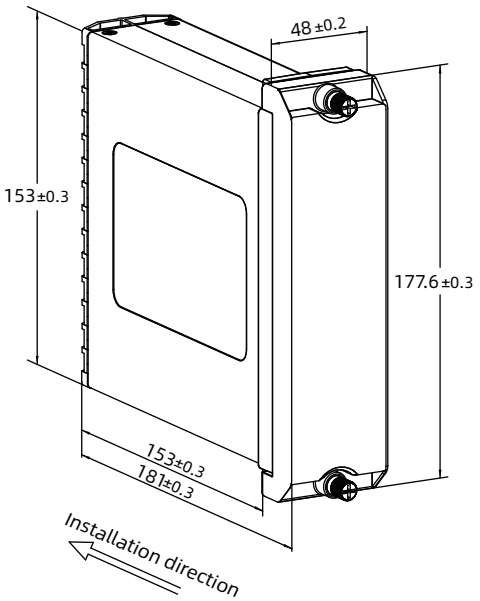
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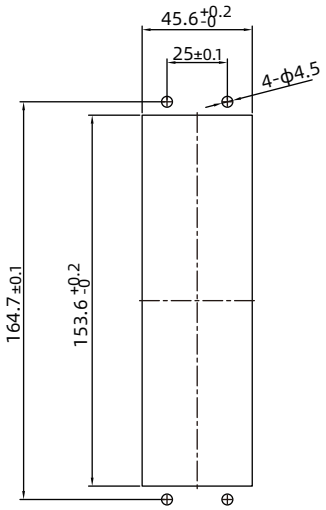
Product Technical Parameters

Dielectric Strength of Test Block		
Input/ Output		2 kV/1min
After inserting the test plug, between disconnected terminals		2 kV/1min
Withstand pressure between all terminals and case housing		5 kV/1min
Between Adjacent Contact Pairs		2 kV/1min
Between AC contact pairs		5 kV/1min
After inserting the test plug, Between AllTerminals and the Case shell		5 kV/1min
Continuous Current of Testing Module		20 A or 100 A/10S continuously
Maximum Operating Voltage		300 V AC or 300 V DC
Terminal Blocks		Screw terminals
Wiring Terminal Diameter		0.5-2.5 mm^2 × 2
Protection Requirement	IEC 60255-27:2013	IP40
EMC	Community EMC Directive This product is classified as electromagnetically benign and is thus excluded from the Europear	
Vibration and Collision		
Vibration	IEC 60068-2-6:2007	Environmental testing of electrical and electronic products-part 2, test methods,tests for Fc
Vibration response	IEC 60255-21-1:1988	The acceleration amplitude is 10 m/s^2
Vibration durability	IEC 60255-21-1:1988	The acceleration amplitude is 20 m/s^2
Impact	IEC 60068-2-27:2008	Environmental testing for electrical and electronic products-part 2, test methods,test Ea and guidance, impact
Impact response	IEC 60255-21-1:1988	The acceleration amplitude is 98 m/s^2
Impact durability	IEC 60255-21-1:1988	The acceleration amplitude is 294 m/s^2
Conllision	IEC 60068-2-27:2008	Environmental testing for electrical and electronic products-part 2, testmethods,test Ea and guidance, impact
Conllision response	IEC 60255-21-1:1988	The acceleration amplitude is 196m/s^2
Operating Environment		
Operational/Storage temperature		-25℃ to 70℃
Maximum operating humidity		93%/+40℃
Salt fog test	IEC 60068-2-11:1981	(35+2)℃,Solution pH value within 6.5~7.2, salt solution concentration (5+1)% (mass ratio)， 96H
Flame Retardant		
Flame retardant grade		UL 94 V-0 Class flame retardant (750℃,30s)

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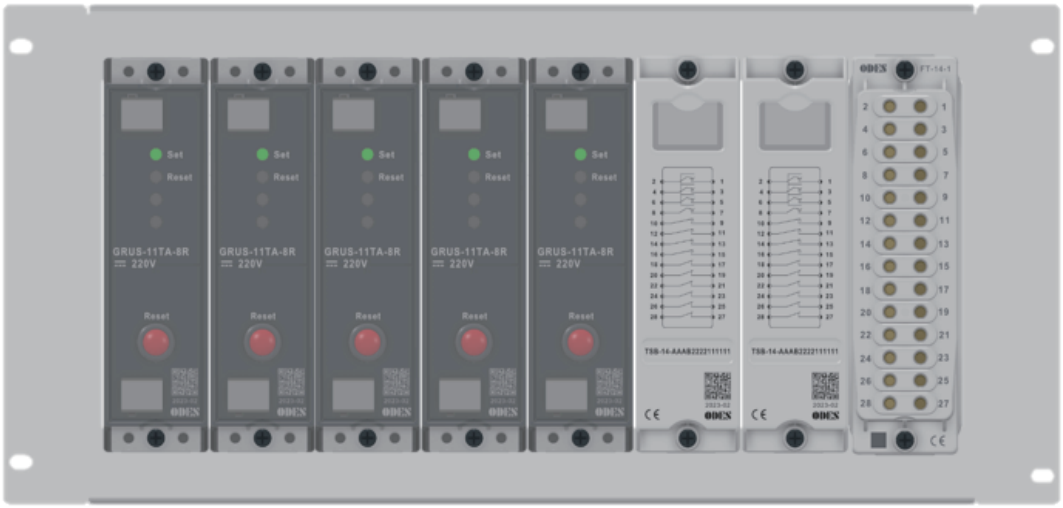
Embedded Installation





Mounting dimension diagram

Installation schematic



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Typical model principle wiring diagram

