DOUBLE CHECK

INSTRUCTION MANUAL

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SAFETY RULES

CAUTION  **RISK OF ELECTRIC SHOCK**

This tester has been designed with your safety in mind. However, no design can completely protect against incorrect use. Electrical circuits can be dangerous and/or lethal when lack of caution or poor safety practices are used.

Do not carry out field measurements on either the power system grounding, during periods of forecast lightning activity, in areas that encompass the station being measured or of the power network connected to the station being measured. In the event that lightning occurs, stop all testing and isolate any temporarily installed test spikes.

Preparations for testing of power system grounding can leave personnel vulnerable to exposure caused by faults at or fed from the system under test, transferred potentials from remote test grounds, and inadvertent line energisations.

While the probability of the occurrence of one of these events is low, personnel safety will, nevertheless, be enhanced by the following:

When working near high tension systems rubber gloves and safety shoes should be worn.
Work on clean, dry crushed rock or an insulating blanket or use insulated ladder or insulated lift.
Avoid bare hand to hand contact between the tester and extended test leads.

Disconnect the tester from any external circuit when checking or changing the Fuse and/or batteries.

CAUTION  **READ THE MANUAL**

Follow the instructions in the Manual for every measurement. Read and understand the general instructions before attempting to use this tester.

SAFETY CHECK

Before using the tester check its physical condition and the fuses.
Poles and connecting lead must be free of cracks or any damages and must be insulated as when they were new.
Fuse replacement is described later in this user's manual..
When changing the fuses, always disconnect from any circuit.
When replacing the fuse use only the type specified, HBC fuse, and insert correctly into the fuse holder.
Always do a pre-proofing and post-proofing test as described later in this manual.

DON'T TOUCH

Don't touch exposed wiring, connections or other "Live" parts of an electrical circuit. If in doubt, check the circuit first for voltage before touching it.

Do not use cracked of broken test leads.

THIS INSTRUMENT SHOULD ONLY BE USED BY A COMPETENT, SUITABLY TRAINED PERSON.

REMEMBER

SAFETY IS NO ACCIDENT

CAUTION RISK OF ELECTRIC SHOCK

CAUTION READ THE MANUAL

GENERAL DESCRIPTION

Have you ever try to measure the voltage between overhead lines or between Line and Earth outside a building in the open, while on a ladder?
Did you do it using a normal meter with normal test leads?
Were you scared while doing it? I bet you were and you have all the right reasons to be.
This is why the Double Check Was initially designed.

Double Check has a **Visual Voltmeter** with a **Neon Light scale *on each side***, which lit proportionally to the voltage between its sticks. Double Check has a **Visual Voltage Detector** with a High Bright **Led *on each side,* which Lit when voltage is Detected** between it's sticks.

Double Check has an **Acoustic Voltage Detector which sounds a LOUD** Buzzer, ***on each side*** **when voltage is Detected** between it's sticks. The Double check has **both sides Fused**, and at least, everything **Doubled**.
It's a **CAT.IV** Double pole Measurement System which has **it's poles long enough to be clear of the lines while testing** them.

Double Check has 2 Insulated non slipping rubberized handles. These Double poles testers are made out of highly insulating **Super Polished High Grade Fiber Glass**. Their color is highly visible and it is strong and durable. Both poles are electrically connected by a **High Strength Insulated Cord which is securely held by customized Strength reliefs** . Each circuit is fully fused by **H**igh **B**reaking **C**apacity **Fuses**.

Safety has been the most important factor while developing this product. Each circuit is present on the left pole as well as on the right pole.
Each circuit works independently from each other.
The cord connecting the poles is doubled as well, so each circuit has it's own conductor going from one pole to the other.
The DOUBLE CHECK has Visual Voltage Indicators (neons) which lit when the voltage between the poles is superior or equal to 110V, 240V, 380V and 415Vac
Double pole are supplied with accessories Standard as shown below.

BRIEF PRODUCT DESCRIPTION

NEON VOLTAGE SCALE

AUDIO VOLTAGE INDICATOR

LED VOLTAGE INDICATOR

TIP

TIP

ISOLATED POLE

SUN COVER

ISOLATED POLE

ISOLATED CONNECTING LEADS

HBC FUSE

HBC FUSE

ISOLATED HANDLE

ISOLATED HANDLE

FEATURES

Insulated Double Poles: These Orange High Polished Fiber Glass rods are long enough to be safe and clear of the lines while testing.
They are made out of Super Smooth Polished High Grade and Super Insulating Fiber Glass material. This makes the user confident about it's safety.
The ***user is not at risk*** because he does not have to bind over energized conductors.
The user is always at a safe distance from the energized wires under test.

Visual Voltmeter : Double poles have, on each side, a ***Scaled Neon Voltmeter*** showing when the voltage has been reached. The neon lit in a bar-graph fashion, clockwise, with the lower voltage on the left side.

Visual Voltage Detector: As soon as voltage is detected, the Voltage Detected, ***High Bright Led indicator*** turns ON. This ***indicate to the user that dangerous voltage is present*** between the tips of Double Check. This indicator is on both sides ad are working individually from each other.

Acoustic Voltage Detector: As soon as voltage is detected the Acoustic Voltage Detector sounds a LOUD and piercing noise to indicate to the user that voltage has been detected between the tips.

HBC Fuses: For added safety, the Double Check uses High Breaking Capacity Fuse (also called High Rupture Capacity fuse or HRC).

Rubberized Handles: To stop the user's hand to slip, the handles are made of non slippery rubber material. This add to safety while in use.

Insulated Cord: Double Check uses a High Strength cord between the poles. This is securely held by customized strong Strength reliefs.

Interchangeable Tips: Double Check uses a strong 8mm Standard thread to attach all the different type of tips.

ACCESSORIES

Piercing cones tips, hooks, Non Standard Tips can be made on Request.

PRE-TESTING SAFETY PROOFING TEST

Always use a double check proofing unit before testing.
The double Check proofing unit is an accessory which is specially made for the Double Check (see double check proofing unit user's manual).
It comprise of a rotary voltage selector.
Connect the leads of the double check proofing unit to the tips of the double check.
Select the wanted voltage and press TEST.
When everything is correct;

1. The corresponding neon scale should lit.
2. The Led voltage detector should lit.
3. The Acoustic Voltage Detector should sounds.

If this is not the case, see Fuse replacement.
Do not proceed if these three conditions are not correct.

POST-TESTING SAFETY PROOFING TEST

Always use a double check proofing unit after testing
The double Check proofing unit is an accessory which is specially made for the Double Check (see double check proofing unit user's manual).
It comprise of a rotary voltage selector.
Connect the leads of the double check proofing unit to the tips of the double check.
Select the wanted voltage and press TEST.
When everything is correct;

1. The corresponding neon scale should lit.
2. The Led voltage detector should lit.
3. The Acoustic Voltage Detector should sounds.

If this is not the case, see Fuse replacement. **Disregard previous test results if these three conditions are not correct.**

OPERATING INSTRUCTIONS

Visual Inspection: Inspect the Double Check visually for any cracks or physical damage. If your equipment seems not perfect, send it for servicing.

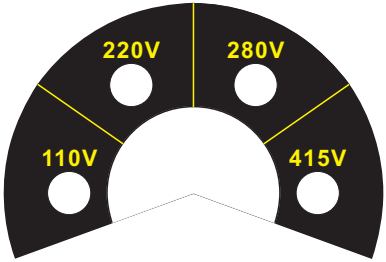
Pre-Safety Proofing Test: Proceed with the pre-safety Proofing Test as described in the user's manual of your double check's proofing unit (sold separately). Once this pre-safety test is made and is satisfactory, and only then, proceed to use the double check.

Use it

Make sure you are well on your foots and stable and will not slip or fall in any case.
Connect one side of your double check to one conductor by making contact with one of the conductor, then, touch the other conductor with the other pole of your double check.
Taking all the necessary precautionary measures explained by your training, connect the double check between the conductors to verify.
Listen, visualize and concludes results form the double check.

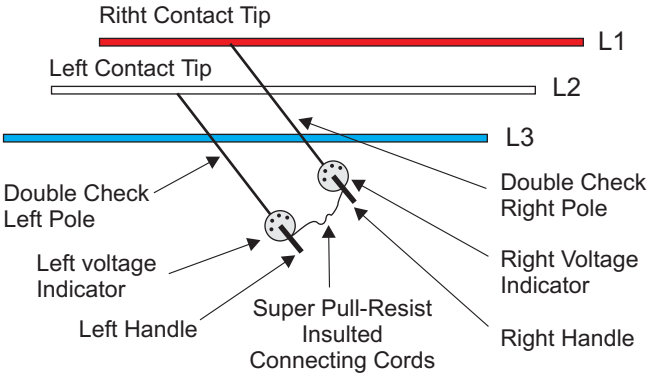
Post-Safety Proofing Test: Proceed with the post-safety Proofing Test as described in the user's manual of your double check's proofing unit (sold separately). If the post-safety test is not satisfactory, disregard results made previously and send your double check for servicing.
In that case, do not proceed with any decision involving Double Check.

FACIA LABEL (Instructions)



SOME APPLICATIONS

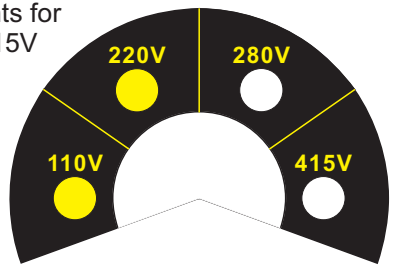
Measure and confirm Overhead Voltage between Lines, or Line to Earth/Ground and/or Lines to Neutral.
Measurements can be done in all Safety due to the clearance from the probes contacts.
This is done when, for example, using a lift bucket from a truck, then the technician can stand in the bucket, and still can reach all the phases and check voltage between each phases and between each conductors without being at risk.
Check Voltage Presence between two conductors or between Phase and Earth.
Measure and Detect Voltage between Bus bars and between Bus bar and Earth.
Use where you are not comfortable with your normal test leads.
Tips can be changed for different types.
Available tips: Fork type, Piercing trough Insulation, Cone, Flat tip, Other tips on Demand.



PRINCIPLE OF HOW IT WORK-DISPLAYS-RESULTS

The Fused Circuitry: In series with each circuit is a HBC or HRC fuse. These fuse protects the user and the circuit against over-current.

The Neon Voltage Scale Indication and Display: The Voltmeters results are shown on a Neon Scales on both sides. These voltmeters use a bar-graph style scale, with the lower value on the left side, going clockwise to the right. There are neon lights for 110V, 220V, 280V and 415V As the voltage increase, the neons lights up, as shown on the right, neon 110V and neon 220V lit to show that voltage on the tips is at least equal to 220V.



The Voltage Detector with LED: The led Voltage Detector lit up as soon as there is enough voltage across the tips between the poles. This indicates that voltage between the tips has reached a dangerous level and therefore could be lethal. Once the Led lit, be extra careful.

The Voltage Detector with Buzzer: The Acoustic Voltage Detector sounds as soon as there is enough voltage across the tips between the poles. This indicates that voltage between the tips has reached a dangerous level and therefore could be lethal. Once the Acoustic Voltage Detector sounds, be extra careful.

FUSES REPLACEMENT

Make sure the Double Check is not connected to anything and that you are safe from any voltage carrying conductors.

Unscrew the fuse cover and remove the fuse from inside it's holder. Check and replace the faulty fuse with the same type.
Place the new fuse in it's holder and screw the fuse cover back into place correctly.

CHANGING TIPS

Tips can be changed using 8mm thread type of our manufacture only. Unscrew by turning the tip Anti-clockwise. Replace with the new tip, then screw the new tip clockwise. Do not over-tight.

TAKING CARE OF YOUR DOUBLE CHECK

Storage:
Always store your double check in its carrying case to protect it against external physical damage. Take great care of it by making sure it does not get ill-treated.
Verify it's proper working:
Before and after use, check that it is working properly.

CLEANING

Use a slightly damped cloth to clean the fiberglass. Do not use chemicals other than the ones supplied. Clean the instrument case with a cleaner and wipe with dry cloth.

SPECIFICATIONS

GENERAL

Maximum Rating between Poles.....	450V
Category.....	IV

FUSES

Type.....	HBC/HRC
Rate of Rupture.....	Slow Blow
Current Rating.....	500mA
Voltage Rating.....	600V
Quantity.....	2

VOLTMETER The Neon Voltage Scale Indication

Neon lit when Voltage > or = ...	110V
Neon lit when Voltage > or = ...	220V
Neon lit when Voltage > or = ...	280V
Neon lit when Voltage > or = ...	415V
Accuracy on both voltage display.....	±20% of Rdg

Voltage Detector with LED

Led Lit when Voltage between Probes >..	25V ±20V

Voltage Detector with Buzzer

Buzzer Sounds when Voltage on tips >....	25V ±20V

MECHANICAL

Total Length.....	1000m/m
Fiber Glass Length.....	795 m/m
Weight	700g

ENVIRONMENTAL

Operating temperature Range.....	1 C to +55 C
Storage Temperature.....	-20 C to +70 C

MATERIAL

Poles.....	Fiber Glass
Handles.....	Rubber
Body.....	ABS

OPTIONS

1.Piercing Cone Tip Type 1.
2.Piercing Cone Tip Type 2.
3.Hook Type 1.
4.Hook Type 2.
5.Carrying Pouch.
6.Spares Fuses.
7.Test Certificate.