

# Safety Bulletin No. 08/2017

## OVERHEAD LINE HIGH VOLTAGE DETECTORS

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| Issue date    | 27 July 2017   |
| Issued by     | Vincent Cranny, Head of Health, Safety & Environment |
| Applicable to | Overhead Linesmen and Engineers                      |

A Safety Alert has been received via the ENA issued by ESB Networks detailing HV Voltage Detectors failing to operate correctly during heavy rainfall. If rainwater accumulates on the shell of the detector it can create a continuous conductive film affecting the operating threshold of the voltage detector depending on the design.

The detectors are electrical field measurement devices that rely on an even, continuous field around a conductor. How the detector is used could impact its ability to operate reliably.

The situations where the detector may not operate reliably are listed below with images in the table at the end.

- **Reaching between same-phase conductors.**  
This can blind the devices sensors as the device cannot detect a voltage drop around it.  
Always apply the device to a conductor away from anything in-phase.
- **Used close to plant, jumpers and droppers.**  
These disturb the steady electric field the detector relies on.  
It is good practice to test an overhead line, with the detector at right angles to the conductor and away from anything that could disturb the steady field around it. For example, a conductor that runs parallel to the detector.
- **Use of incorrect electrodes (i.e large hook type).**  
These move the device further away from the line than the manufacturer intended.  
The device may well then read a lower field strength and fail to trigger. Make sure the electrode makes contact with the bare conductor. The large hook type electrode is only to be used for live phasing and not testing dead.
- **Heavy Rain causing a continuous water film on the shell of the detector.**  
The rain will be conductive and can shield the device's sensors.  
Clean the devices outer shell with a recommended silicone or wax polish to aid water shedding.
- **Heavy surface scratching on the shell of the detector.**  
This can impact shedding of rain water as well as affecting the rated insulation properties of the shell. Store the detector in clean, dry conditions free from damp or condensation and protected from damage.
- **Use of paper or metallic stickers on the shell of the detector.**  
As with rain water, paper and metallic labels can conduct at the voltages in question. This will shield the sensors.

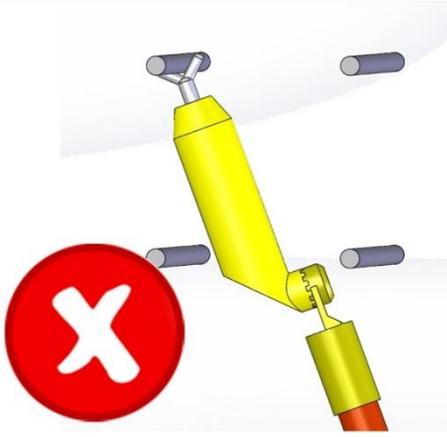
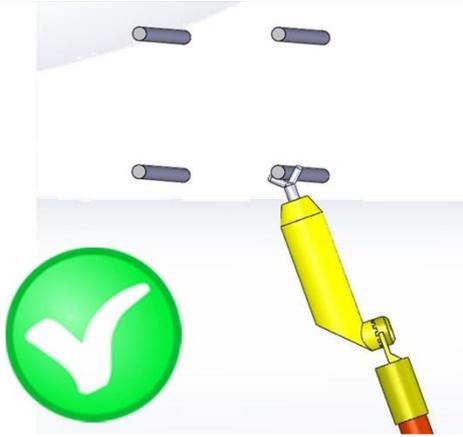
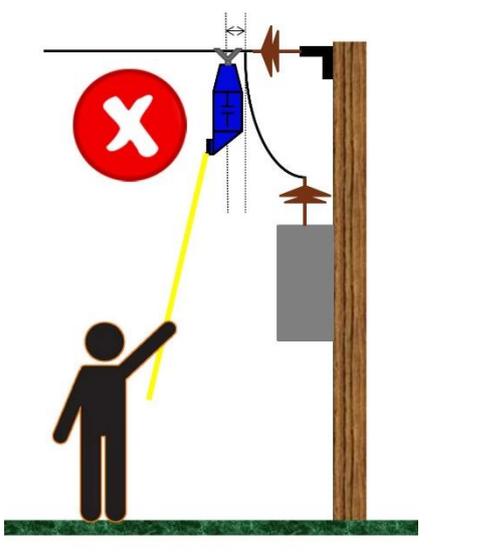
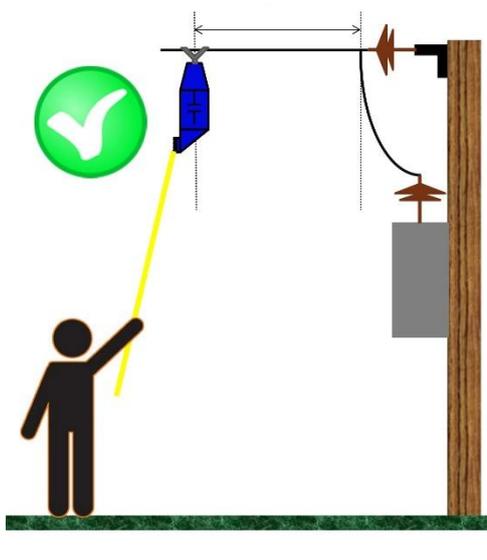
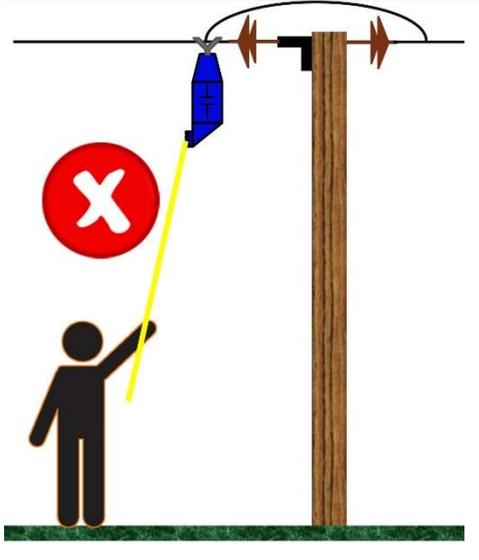
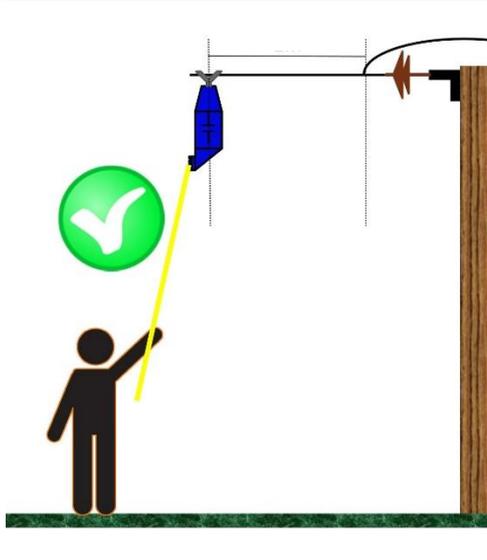
Only approved detectors shall be used for their designed voltage range. Detectors shall be inspected and tested annually and only non conductive test identification labels shall be used. Failed detectors shall be scrapped.



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| <p>Detection near same-phase conductors</p> |    |    |
| <p>Use around droppers</p>                  |   |   |
| <p>Use around jumpers</p>                   |  |  |

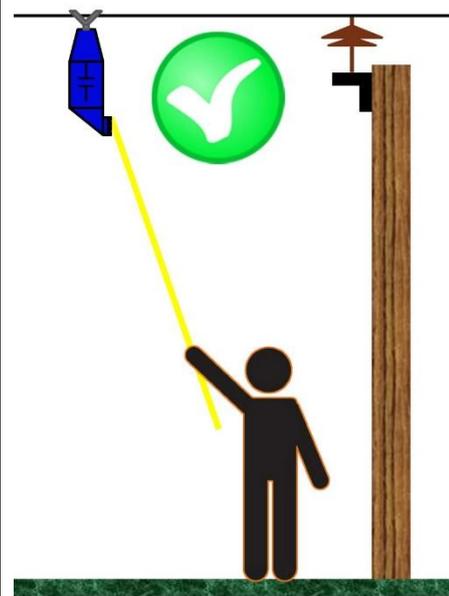


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Use of incorrect electrodes



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