

Trans - Sense User Manual



Revision History

Issue:	Modification	Date:	Modified By:
1.0	First Issue		

Safety Precautions



The Trans-Sense is used to measure high voltage pulses, whilst the equipment is in use, all normal safety precautions associated with the HV generator being verified should be followed. The Trans-Sense is for EN61000-4-4 verification only.



The connections to the Trans-Sense should be made with shrouded test plugs and use a cable suitably rated for the transient being measured (2 kV Maximum Peak Voltage).



Battery replacement should be performed with the Trans - Sense disconnected from the HV test generator.



There are no serviceable parts inside the Trans-Sense, do not attempt to disassemble or repair. In the event of a failure or damage please contact the manufacturer for servicing.



Prior to use, the Trans-Sense should be inspected to ensure there is no damage to the case / connectors or battery compartment. If any damage is visible the Trans-Sense should not be used. Any connecting cables used should be inspected for correct insulation and integrity. Any damaged cables should be replaced before use.



If the Trans-Sense requires cleaning then this should be performed with a damp cloth only, ensuring that the outer case is thoroughly dry prior to use.



The Trans-Sense is for indoor use only.

Contents

Revision History	2
Safety Precautions.....	3
Contact Details.....	5
Waste Electrical Equipment (WEE)	5
EU Declaration of Conformity.....	6
Introduction	7
Operation	7
Connection to the Transient Generator	7
Power-up	8
Measurement.....	8
Battery.....	9
Technical Parameters	9

Contact Details

In the event of any equipment failure, need for repair or any other general enquiry please use the following contact details:

The Conformity Assessment Business



**609 Delta Business Park, Welton Road, Swindon, United Kingdom,
SN5 7XF**



info@conformity-assessment.com



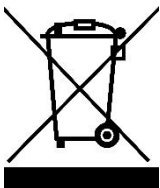
+ 44 (0) 1704 821376



+ 44 (0) 7943 405145



Waste Electrical Equipment (WEE)



The Conformity Assessment Business undertake to accept this equipment at it's end of life for recycling. Please contact us directly to arrange pickup at our cost should the equipment be no longer needed or serviceable.

EU Declaration of Conformity



Declaration of Conformity For Trans - Sense

Applicable Directives:

- **Low Voltage Directive: 2014/35/EU**
- **EMC Directive: 2014/30/EU**
- **RHoS Directive: 2011/65/EU**
- **WEE Directive: 2012/19/EU**

Standards used to demonstrate compliance:

EN 61326-1: 2013 Electrical equipment for measurement, control and laboratory use — EMC requirements Part 1: General requirements

EN 61010-1: 2010 Safety requirements for electrical equipment for measurement, control and laboratory use - Part 1: General requirements.

EN 61010-2010: 2014 Safety requirements for electrical equipment for measurement, control and laboratory use - Part 2-2010: Particular requirements for laboratory equipment for the heating of materials.

We:

The Conformity Assessment Business Ltd.

Registered office address:

609 Delta Business Park, Welton Road, Swindon, United Kingdom, SN5 7XF

Declare that the Trans-Sense meets all applicable Directives, This declaration of conformity is issued under the sole responsibility of the manufacturer:

Signed:



Date: Friday, 08 November 2019

Peter Green, Director (The Conformity Assessment Business)

Introduction

The Trans-Sense provides a very quick verification of key unloaded waveform parameters for testing to EN61000-4-4. It has been designed to enable a quick but accurate check of the transient amplitude prior to testing.

In operation, the applied 15 ms transient burst charges up a capacitor and then the charge on this capacitor is measured immediately after the transients stop. This allows for verification of the 15 ms burst and also amplitude verification of the applied transients. To improve accuracy a series of 10 bursts are measured and the average reading displayed.

The Trans-Sense is for measurement of 15 / 300 ms transient bursts only at 1 kV and 2 kV positive output potential.

Operation

Connection to the Transient Generator

The Trans-Sense has two external connections - Input (red connector) and Earth (green connector).



The green Earth connector should be connected to a true earth on the generator or ground plane. It should not be connected to CDN output (EUT output) on the generator as this contains the transients to be measured.



The Trans-Sense supports input at mains potential so if the transient generator EUT supply is enabled it won't cause damage. However, this can affect the result by changing the CDN source impedance and also cause false triggering. The Trans-Sense should be used with the EUT mains supply disconnected.



The connections to the Trans - Sense should be made with shrouded test plugs and use a cable suitably rated for the transient being measured (2 kV Maximum Peak Voltage).

The trans sense is for verification of positive going transients only

Power-up

The Trans-Sense is equipped with an automatic power off to help maximise battery life. To power up, press and hold the front push button until the display comes on. The Trans-Sense will automatically power off after a single measurement run.

Measurement

The front display on the Trans-Sense will take the user through a measurement run.

1. Waits for the application of the transients for up to two minutes
2. Measures the average of the applied transient bursts and displays an arbitrary level that can be compared to previous measurements

Note on Relative Amplitude:

Relative Amplitude is an arbitrary figure used to determine that the transient amplitude / burst duration has not changed from the calibration point. This can not be used to set voltage as it is not linear across the full voltage range of measurement.

It is recommended that when a transient generator is returned from calibration, a benchmark is obtained at various voltage outputs from the CDN. Any change in either the amplitude or burst duration over the calibration period will be picked up by the Trans-Sense.

A change from the benchmark pulse length of more than approximately 10 from initial check point should be investigated further.

Important note on CDN Coupling: When a transient generator is set to couple to 1 line only, the source impedance differs (lowers) when compared to the coupling impedance for 2 or more lines. For this reason and due to the way the Trans-Sense works, different values will be measured by the Trans-Sense. When using the Trans-sense, coupling should remain the same between verifications. i.e. if the generator was set to couple onto the Live, Neutral and Earth at the same time during the initial verification then subsequent verifications should use the same coupling technique.

Battery

The battery requires replacement when the unit will not remain powered on after the power button is released.



Battery replacement should be performed with the Trans – Sense disconnected from the HV test generator.

Technical Parameters

Transient Detection:

1 to 2 kV EN61000-4-4, 15 / 300 ms positive burst only

Maximum Input Voltage

250 V AC, 50 Hz

2.5 kV

Power Supply

9V Alkaline PP3

Battery Life, Approximately 200-250 full check cycles