



Elme S.r.l. Via Arosio, 4 Milano (MI) I-20148 Italy - www.elme.it infoesd@elme.it Tel: +39 02 4009.2076 Fax: +39 02 4009.1993

Technical data sheet # TST38E

Art. E3 - OPERATOR GROUND CHECK DUAL SHOES AND WRISTBAND TESTER

Meets IEC STD 61340-5-1 : 2007



GENERAL

ELME E3 DUAL TESTER has been designed to test the performance of ESD wrist straps and footwears such as clogs, shoes, sandals or foot-grounders.

E3 is designed to operate tests in accordance with IEC 61340-5-1:2007 standard (table 1).

E3 performs test on the ESD wristband and the ESD footwears automatically. The operator can easily select the test to perform. **E3** includes a dual foot plate in order to verify the conductivity of the left and right foot separately and simultaneously.

AVAILABLE MODELS

E3 SE	E3 SPSE – 220V	E3 SD (German)	E3 SPSE – 220V (German)	E3 SPSU – 110V (USA)
MEW0002001	MEW0002011	MEW0002000	MEW0002010	MEW0002015
E3 tester	E3 tester	E3 tester	E3 tester	E3 tester
Yellow wall panel (English)	Yellow wall panel (English)	Yellow wall panel (German instructions)	Yellow wall panel (German instructions)	Yellow wall panel (English)
Dual footplate	Dual footplate	Dual footplate	Dual footplate	Dual footplate
Connection cords	Connection cords	Connection cords	Connection cords	Connection cords
9V battery	9V battery	9V battery	9V battery	9V battery
	Power supply 220V		Power supply 220V	Power supply 110V
Manual	Manual	Manual	Manual	Manual
Carton box	Carton box	Carton box	Carton box	Carton box
3,6 Kg total weight	3,8 Kg total weight	3,6 Kg total weight	3,8 Kg total weight	3,8 Kg total weight

MODELS WITH STAND

E3 STAND SE	E3 SPSE STAND – 220V	E3 SD STAND (German)	E3 SPSE STAND – 220V (German)	E3 SPSU STAND – 110V (USA)
MEW0002021	MEW0002031	MEW0002020	MEW0002030	MEW0002035
E3 tester	E3 tester	E3 tester	E3 tester	E3 tester
Yellow wall panel (English)	Yellow wall panel (English)	Yellow wall panel (German)	Yellow wall panel (German)	Yellow wall panel (English)
Dual footplate	Dual footplate	Dual footplate	Dual footplate	Dual footplate
Metal stand	Metal stand	Metal stand	Metal stand	Metal stand
Connection cords	Connection cords	Connection cords	Connection cords	Connection cords
9V battery	9V battery	9V battery	9V battery	9V battery
	Power supply 220V		Power supply 220V	Power supply 110V
Manual	Manual	Manual	Manual	Manual
Carton box	Carton box	Carton box	Carton box	Carton box
12,8Kg total weight	13,0Kg total weight	12,8Kg total weight	13,0Kg total weight	13,0Kg total weight



E3



E3 STAND

E3 INCLUDES

INSTALLATION

The **E3** has been designed for a wall application (wall mount). Hang or glue the yellow panel to a protected location at the entrance of the EPA, assuming that the personnel will perform the test before entering the area. Ideally, the best location is at the entrance of the production line, in order to allow the preventive test procedures before starting the daily work.

TESTING PROCEDURE

MODE SELECTION



On the top right you find the MODE SELECTOR which enables you to select the kind of test you like to perform

1. WRISTBAND ONLY
2. FOOTWEARS ONLY
3. WRISTBAND AND FOOTWEARS



mode selector

L.E.D. INDICATIONS

The L.E.D. indication is designed to provide an immediate visual reading of the results of the performed test on footwears and wristbands

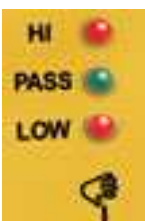
“HI” L.E.D.s (red colour) indicate that the equipment (footwears and/or wristbands) show an electrical resistance too high, exceeding the top limit of the correct range

“PASS” L.E.D.s (green colour) indicate that the ESD equipment (footwears and/or wristbands) show correct electrical resistance values (within the range)

“LOW” L.E.D.s (red colour) indicate that the equipment (footwears and/or wristbands) show an electrical resistance too low, exceeding the bottom limit of the correct range

TESTING WRISTBANDS ONLY

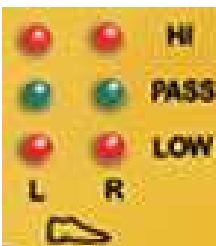
1. turn the selector on the left position indicating the “hand”
2. wear your wristband tight as recommended for a good electrical connection
3. connect the cord to the wristband
4. connect the other end of the cord to the respective receptacle (choose if “banana” or “snap” on the front panel of the E3)
5. press and hold the metal plate on the front of the E3
6. the coloured L.E.D.s will shine (HI, LOW or PASS)



wristband L.E.D.s

TESTING FOOTWEARS ONLY

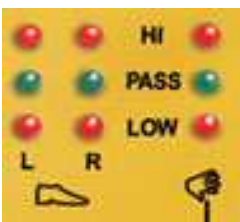
1. turn the selector on the top position indicating the “shoe”
2. check that your ESD shoes have a clean sole in order to provide the best electrical contact. A dirty sole will increase your electrical resistance to ground and will not allow a correct test
3. wear your left and right ESD shoes as indicated by the instructions for a good electrical connection with your feet
4. step on the dual plate positioning your feet on the two metal plates (place your feet ensuring that the soles of the shoes are placed in the centre of each metal plate)
5. press and hold the metal plate on the front of the E3
6. the coloured L.E.D.s will shine respectively for the left footwear and the right footwear (HI, LOW or PASS)



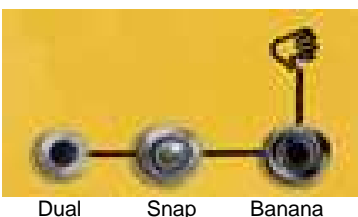
footwears L.E.D.s

TESTING FOOTWEARS AND BANDS

1. turn the selector on the right position indicating the “shoe + hand”
2. wear correctly the wristband and the ESD shoes
3. connect the wristband cord to the E3 respective receptacle and step on the dual foot plate placing your feet on the respective metal plates (left and right foot)
4. press and hold the metal plate on the front panel of the E3
5. the coloured L.E.D.s will shine respectively for the left foot, the right foot and the wristband (HI, LOW and PASS)



WRISTBAND CONNECTIONS



The E3 has input connections for all kinds of available cords on the market:

- 4mm banana receptacle (allows both standard and reverse banana plugs)
- 10mm male snap
- DUAL BANDS CORDS bi-polar receptacle designed for special dual bands mainly used with resistance-based permanent monitors

TOUCH PLATE



The metal touch plate is designed to provide the electrical contact between the skin of the operator and the monitor. Typically, the operator presses on the plate with his finger and holds pressure until the L.E.D.s shine giving the desired indication

BATTERY INDICATION



The **E3** operates with batteries or with external power supply. When operating with batteries, the LED indications “LOW BATTERY” will advise about status of charge. The LED shines amber colour when the battery is low of charge

FOOT PLATE CONNECTION



On the lower part of the E3 is located the input receptacle of the connection cord from the tester to the foot plate. The cord connects the dual foot plate providing informations for the left and right foot

DOOR OPENER



Unique feature of the **E3** is the door-opening system. On the lower part of the tester is located the NO-NC relay connection for the electrical door opening control system. In this way the **E3** can discriminate the access to EPA restricted areas. **For technical application on electrical opening door systems or other different applications please see specific instructions.**

Controls and readings on the **E3****

Test Mode	Wristband LED	Left Foot LED	Right Foot LED	Buzzer	Door Opener
Wristband Only	PASS: green LED on	OFF	OFF	Silent	Door Open
	FAIL: red LED on	OFF	OFF	Pulse	Door Closed
Footwears Only	OFF	PASS: green LED on	PASS: green LED on	Silent	Door Open only if both feet PASS
	OFF	FAIL: red LED on	FAIL: red LED on	Continuous	Door Closed
	OFF	FAIL: red LED on	PASS: green LED on	Continuous	Door Closed
	OFF	PASS: green LED on	FAIL: red LED on	Continuous	Door Closed
Wristband & Footwears	PASS: green LED on	PASS: green LED on	PASS: green LED on	Silent	Door Open only if both feet an wristband PASS
	PASS: green LED on	FAIL: red LED on	FAIL: red LED on	Continuous	Door Closed
	PASS: green LED on	FAIL: red LED on	PASS: green LED on	Continuous	Door Closed
	PASS: green LED on	PASS: green LED on	FAIL: red LED on	Continuous	Door Closed
	FAIL: red LED on	PASS: green LED on	PASS: green LED on	Pulse	Door Closed
	FAIL: red LED on	FAIL: red LED on	FAIL: red LED on	Pulse	Door Closed
	FAIL: red LED on	FAIL: red LED on	PASS: green LED on	Pulse	Door Closed
	FAIL: red LED on	PASS: green LED on	FAIL: red LED on	Pulse	Door Closed

** the FAIL reading will show HI or LOW fail, illuminating the higher or the lower red LED

Resistance reference values range on the **E3** (according to IEC 61340-5-1 std.)

Item Tested	Lower limit	Upper limit
Wristband	750 Kohm	35 MOhm
Footwear (primary grounding)	100 KOhm	35 MOhm
Footwear (combined grounding)**	100 KOhm	100 MOhm

** when footwears are used in combination with wristbands, turn the MODE SELECTOR on the right position (shoe + hand symbols): the range testing the shoes will automatically switch to the correct values.

TECHNICAL INFORMATIONS

- tester dimensions / weight 158x95x60mm
- tester weight 240 gr
- tester weight with battery 280 gr
- footplate dimensions 380x380x8mm
- power supply battery 9V
- external power supply (optional) 220V AC/ 9VDC
- colour white box, yellow/black panel, coloured LEDs

- accuracy +/- 10%
- Test voltage 28V
- **Meets IEC 61340-5-1:2007**

The datas shown above are intended only as general indication of the standard production values. The do not refer to specific production lots. The document has no legal value.

ELME srl Milano