

# Allied Edison LLC



*ZX3 Ungrounded DC System Fault Detection and Location Equipment designed for the 21<sup>st</sup> century*

## ZX3 Specifications

**ZX3 Specifications:** (R=Fault Resistance, Cs=System Capacitance)

### Base Unit Electrical:

- Line Input Voltage (V<sub>II</sub>) range: 24VDC to 600VDC.
- With V<sub>II</sub> = 135V the ZX3 Base Unit will draw less than 15mA.
- Current draw is  $\leq 30\text{mA}$  over the entire input voltage range.
- Operating Temperature Range is  $-10^{\circ}\text{C}$  to  $48^{\circ}\text{C}$
- Storage Temperature Range is  $-30^{\circ}\text{C}$  to  $60^{\circ}\text{C}$
- Shock & Vibration – NA – handheld test instrument
- Size & The ZX3ight - 9" (L) x 4.75" (W) x 2.25" (H), 2.1 lbs
- Reliability - MTBF = 2000 Hrs

## Base Unit Detection Mode:

- Fault Detection Range (No Cs): 0 to 300K Ohm

(Note: values above 100K are displayed with reduced accuracy < 90% accuracy)

- Fault Detection Range (With Cs): RC limit is 5 seconds

(Note: 90% accuracy for R values  $\leq$  100K ohms - example  $R=100K \times Cs=50\mu F$ ).

- Fault Detection with  $R > 300K$ : Rgp & Rgn displayed as “open”.
- Low Value Fault Detection Accuracy: R values  $\leq$  2K ohms are displayed with as much as 50% error.
- Detection Speed: 70 +/- 2 seconds.

(Note: This allows a 90% accurate reading with a 100K fault and a system capacitance Cs of 50uF)

## Base Unit Battery Fault Detection:

- Fault Detection: 0 to 10K Ohm

(Note: With VII = 135 the ZX3 Base Unit can detect up to a 10K fault from inside the battery bank to ground)

## Tracer Unit Electrical:

- Charger input Voltage: 12VDC to 13VDC

(This voltage supplied by the AC adapter supplied with the Tracer unit)

- Internal Battery Life: 8Hrs following 100% charge

- Internal Battery Charge Time: 3Hrs using 12V AC Adapter Supplied with unit.
- Operating Temperature Range is  $-10^{\circ}\text{C}$  to  $48^{\circ}\text{C}$
- Storage Temperature Range is  $-30^{\circ}\text{C}$  to  $60^{\circ}\text{C}$
- Shock & Vibration – NA – handheld test instrument
- Size & The ZX3ight - 9" (L) x 4.75" (W) x 2.25" (H), 1.6 lbs
- Reliability - MTBF = 2000 Hrs

### Tracer Unit Fast Locate Mode: What fault resistance can the ZX3 locate?

- Fault Location (No Cs):  $R \leq 125\text{K Ohm}$
- Fault Location (With Cs):  $RCs \leq 125$  milliseconds (ie  $125\text{K} \times 1\mu\text{F}$ )

(Note: Fast Locate requires a minimum of 1.0mA of ground current)

### Tracer Unit Precise Locate Mode: What fault resistance can the ZX3 locate?

- Fault Location (No Cs):  $R \leq 54\text{K Ohm}$

(Note: With  $V_{II}=135\text{V}$  and 2.5mA injection current)

- Fault Location (With Cs):  $RCs \leq 3.5$  seconds using 4000mSec injection mode.

(Note: example:  $54\text{K} \times 64.8\mu\text{F} = 3.5\text{sec}$  max  $RCs$ ,  $R \leq 135/2.5\text{mA} = 54\text{K}$ )

(Note: Precise Locate requires a minimum of 2.5mA of ground current)

### Tracer Unit Intermittent Mode: 75mA mode

- Intermittent Current Detection (No Cs): R and VII such that the faulted branch sees  $\geq 2\text{mA}$  for greater than 50uSec. Currents that exceed 75mA will be reported as 75mA.

(Note: With VII=135, and internal bridge resistors  $R_p=R_n=51\text{K}$ , the fault  $R_{gp}$  that produces 2mA is less than 8K)

- Intermittent Current Detection (With Cs): R, VII, and Cs such that the faulted branch sees  $\geq 2\text{mA}$  for greater than 50uSec.

(Note: With Cs this can vary widely. With VII=135,  $R_p=R_n=51\text{K}$ ,  $C_s = 2\mu\text{F}$ , the fault that produces 2mA is less than 25K)

### Tracer Unit Intermittent Mode: How large a fault can the ZX3 detect? – 10A mode

- Intermittent Current Detection (No Cs): R and VII such that the faulted branch sees  $\geq 10\text{mA}$  for greater than 50uSec. Currents that exceed 10A will be reported as 10A.

(Note: With VII=135, and internal bridge resistors  $R_p=R_n=51\text{K}$ , 10mA can't be produced. The 10A mode requires capacitance)

- Intermittent Current Detection (With Cs): R, VII, and Cs such that the faulted branch sees  $\geq 10\text{mA}$  for greater than 50uSec.

(Note: With Cs this can vary widely. With VII=135,  $R_p=R_n=51\text{K}$ ,  $C_s = 2\mu\text{F}$ , the fault that produces 10mA is less than 5K)

For pricing, bulk price reductions, additional information, contact

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