

THE SUPER BEAST

SECONDARY SERVICE CONDUCTOR TESTER

INDICATES PROBLEMS ON
SECONDARY SERVICE.

DETECTS OPEN NEUTRAL
QUICKLY, ACCURATELY.

ISOLATES AND IDENTIFIES
OVERHEAD OR UNDERGROUND
COMPLAINTS ON THE
UTILITY SIDE.

VERIFIES CONDITION OF
SECONDARY CONDUCTORS AND
ASSOCIATED CONNECTIONS.

NOW AVAILABLE IN TWO
MODELS: ANALOG AND
DIGITAL METERS.



THE BEST IN THE BUSINESS...JUST GOT BETTER

FOR MORE THAN 40 YEARS, IN OVER 500 ELECTRIC UTILITIES, THE **ORIGINAL SUPER BEAST** HAS SAVED TIME AND MONEY IN DETERMINING THE CONDITION OF SECONDARY SERVICE. WITHIN SECONDS, A TROUBLESHOOTER CAN IDENTIFY IF THE CONDUCTOR IS OPEN, RESISTIVE, OR FUNCTIONING PROPERLY, EVEN WHEN TEMPORARY OR INTERMITTENT FAULTS MAY BE MASKING A DETERIORATING CONDUCTOR.



INDUSTRY LEADERS IN
ELECTRICAL TESTING & PRODUCTS
FOR UTILITIES & COMMUNICATIONS



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www.HJArnett.com

IT'S THIS EASY...

- 1** REMOVE THE KWH METER.
SAFETY NOTE: ALWAYS WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT WHEN WORKING ON OR AROUND ENERGIZED EQUIPMENT.
- 3** ROTATE THE SWITCH TO THE LEFT, READ METERS. YOU WILL SEE ONE OF THE BELOW SETS OF READINGS:

- 2** INSPECT THE METER BASE FOR LOOSE CONNECTIONS OR OTHER VISUAL PROBLEMS. CONNECT THE WHITE CLIP TO NEUTRAL. INSERT SUPER BEAST-P IN THE METER BASE.
- 4** ROTATE THE SWITCH TO THE RIGHT, READ METERS. YOU WILL SEE ONE OF THE FOLLOWING SETS OF READINGS:

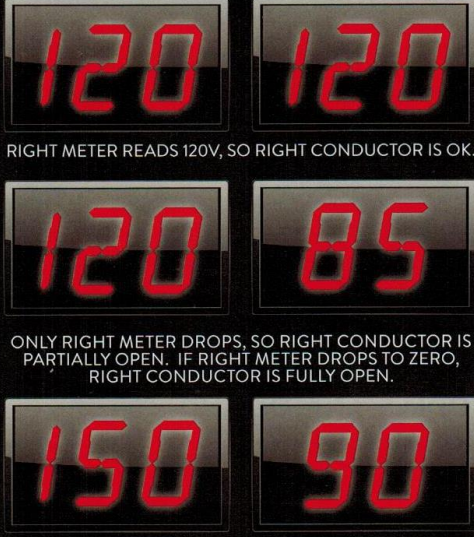
NOTE: A VOLT DROP OF 5-7 VOLTS MAY INDICATE A PROBLEM FOR MOST UTILITIES. DETERMINE YOUR STANDARDS BEFORE BEGINNING YOUR TESTING.



LEFT METER READS 120V, SO LEFT CONDUCTOR IS OK.

ONLY LEFT METER DROPS, SO LEFT CONDUCTOR IS PARTIALLY OPEN. IF LEFT METER DROPS TO ZERO, LEFT CONDUCTOR IS FULLY OPEN.

LEFT METER DROPS, RIGHT METER INCREASES, SO NEUTRAL IS OPEN. THIS PICTURE SHOWS A PARTIAL OPEN. IF LEFT CONDUCTOR GOES BLANK AND THE RIGHT METER READS 240 VOLTS ON THE DIGITAL METER, THEN THE NEUTRAL IS COMPLETELY OPEN.



RIGHT METER READS 120V, SO RIGHT CONDUCTOR IS OK.

ONLY RIGHT METER DROPS, SO RIGHT CONDUCTOR IS PARTIALLY OPEN. IF RIGHT METER DROPS TO ZERO, RIGHT CONDUCTOR IS FULLY OPEN.

RIGHT METER DROPS, LEFT METER INCREASES, SO NEUTRAL IS OPEN. THIS PICTURE SHOWS A PARTIAL OPEN. IF RIGHT CONDUCTOR GOES BLANK AND THE LEFT METER READS 240 VOLTS ON THE DIGITAL METER, THEN THE NEUTRAL IS COMPLETELY OPEN.

VOLTMETER TEST JACKS

The banana jacks on the front panel are used as test points to measure A.C. voltage with a digital voltmeter or analog meter. The white test point (neutral, ground) is common to both the red and black test points on The Super Beast meter; connect it to the common of the digital voltmeter.

To measure the voltage across the right meter, simply touch the other lead of the digital voltmeter to the "Right Conductor" test point on The Super Beast face plate.

Repeat the process with the "Left Conductor" to measure voltage across the left meter.

3-PHASE APPLICATION

The Super Beast can be used effectively on 120/208 volt 3-phase Wye systems using a Portable Meter Base Adapter* as follows:

- 1** CONNECT CLIPS OF THE ADAPTER TO NEUTRAL, LINE 1 AND LINE 2.
- 2** TAKE READINGS ON LINE 1 AND LINE 2.
- 3** MOVE ONE CLIP LEAD FROM EITHER LINE 1 OR LINE 2 TO LINE 3.
- 4** TAKE READINGS AGAIN. INTERPRET THE RESULTS THE SAME AS FOR SINGLE PHASE OPERATION (SEE DIGITAL READOUTS ABOVE).

*Catalog # HJA-469-500

NOTE: THE SUPER BEAST IS NOT DESIGNED FOR USE ON 120/240 VOLT 3-PHASE DELTA, BECAUSE 208 VOLTS ARE PRESENT BETWEEN GROUND AND "HIGH PHASE" OF A STANDARD 3-PHASE DELTA SYSTEM.

HOW THE SUPER BEAST WORKS...

"GOOD" SERVICE CONDUCTORS

When the load switch is in the center position, each meter reads 120 volts, since they are tied across each 120 volt hot leg to neutral. See Figure A, below.

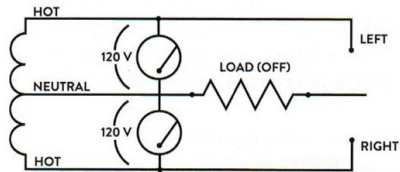


FIG. A - GOOD CONDUCTORS CONNECTED TO SUPER BEAST

When the load switch is flipped to either the Left or Right position (load connected), good conductors respond as shown below, with 120 volts across the load and the meter. See Figure B, below.

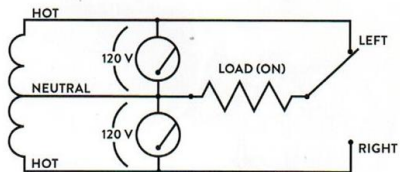


FIG. B - GOOD CONDUCTORS WITH LOAD ON LEFT

The meter should read 120 volts and the load should operate. The selected meter may drop (usually only a couple of volts for conductors in good shape) due to the load being put on the transformer. The other meter is across the other leg to neutral and should read 120 volts. The Super Beast reads as below when connected to good service conductors.

SWITCH POSITION	LOAD	LEFT METER	RIGHT METER
CENTER	OFF	120 VOLTS	120 VOLTS
LEFT	ON	120 VOLTS	120 VOLTS
RIGHT	ON	120 VOLTS	120 VOLTS

OPEN NEUTRAL

Since there are 240 volts across the meter socket terminals with an open neutral, one display will go blank and the other display will show 240 volts.

See Figure C, below.

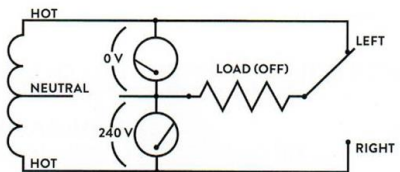


FIG. C - OPEN NEUTRAL CONNECTED TO SUPER BEAST

When the load switch is flipped to either side, the load current must flow through the opposite meter since the neutral is open. The high resistance of the meter will not let enough current flow through it to allow the load to operate. This means nearly all of the 240 VAC is dropped across the opposite meter, registers 240 VAC on the digital meter.

Since very little voltage is dropped across the load, the selected meter reads zero volts. See Figure D, below.

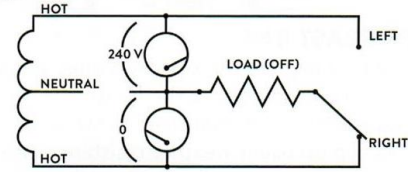


FIG. D - OPEN NEUTRAL ON RIGHT

THE SUPER BEAST-P OPERATES AS BELOW WITH AN OPEN SERVICE NEUTRAL.

SWITCH POSITION	LOAD	LEFT METER	RIGHT METER
CENTER	OFF	120 VOLTS	120 VOLTS
LEFT	OFF	0 VOLTS	240 VOLTS
RIGHT	OFF	240 VOLTS	0 VOLTS

OPEN "HOT" SERVICE CONDUCTORS

The last service problem occurs when one of the "hot" conductors is open, Figure E. Since one conductor lead is broken, no voltage will show across that meter. The other meter will have 120 volts across it and the load will operate, since the conductor lead and neutral feeding it are still o.k.

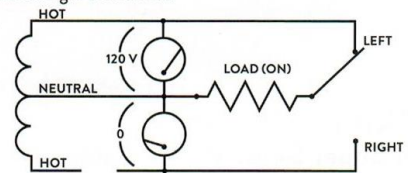


FIG. E - HOT CONDUCTOR CONNECTED TO LOAD

In Figure F, the conductor feeding the load and associated meter is broken, so the load and meter will not operate. However, the other meter is connected across a good conductor and neutral, so it will read 120 volts.

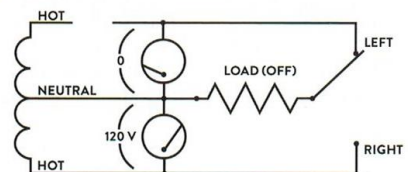


FIG. F - OPEN HOT CONDUCTOR CONNECTED TO LOAD

WHEN CONNECTED TO OPEN "HOT LINE" CONDUCTORS THE SUPER BEAST-P SHOWS:

SWITCH POSITION	LOAD	LEFT METER	RIGHT METER
OPEN RIGHT CONDUCTOR			
CENTER	OFF	120 VOLTS	0 VOLTS
LEFT	ON	120 VOLTS	0 VOLTS
RIGHT	OFF	120 VOLTS	0 VOLTS
OPEN LEFT CONDUCTOR			
CENTER	OFF	0 VOLTS	120 VOLTS
LEFT	OFF	0 VOLTS	120 VOLTS
RIGHT	ON	0 VOLTS	120 VOLTS

THERE'S MORE WITH THE SUPER BEAST

ACCESSORIES

SUPER BEAST BAG

Optional tote bag has thick padded sides and bottom to cushion and protect the Beast. Its rugged, water repellent, nylon reinforced construction gives the bag excellent weather resistance and durability. Comes in our distinctive yellow.

Catalog # HJA-469-501

METER BASE ADAPTER

Portable meter base adapter for use on non-standard meter bases and for 3-Phase applications. Has a 7' cord and spring clips to test from underground or overhead secondary junction points. To use: Insert Super Beast into base, attach spring clips to the correct conductors, then systematically proceed down secondary feeder to isolate the voltage problem.

Catalog # HJA-469-500

SAVE WITH THE SUPER COMBO...

The Super Combo is a complete Super Beast and accessories package at one low price. Includes one Super Beast, meter base adapter, and carrying case at lower cost than if each item is purchased separately.

Catalog # HJA-469 SCO Super Beast (analog)

HJA-469-DSCO Super Beast (digital)



SPECIFICATIONS

The Super Beast-P

Catalog # HJA-469-P

Voltage Range	84- 264 RMS
Display Resolution	1 VAC
Accuracy	± 1V (typ), ± 2V (max) @ 25° C
Reading Settling Time	Approximately 4 seconds
Operating Temperature	-25° C to +50° C
Range Humidity	0 to 90% rH (non-condensing)
Storage Temperature Range	-40° C to +50° C
Load Element	2 each, 1600 watts, 120 VAC
Base Connectors	Standard KWH meter
Size	7 1/4" W x 8 3/4" D
Weight	Net 6 lbs., shipping 8 lbs.

Warranty

One year parts and labor under normal use. Not responsible for misuse.

The Super Beast

Catalog # HJA-469-D

Voltage Range	84- 264 RMS
Display Resolution	1 VAC
Accuracy	± 1V (typ), ± 2V (max) @ 25° C
Reading Settling Time	Approximately 4 seconds
Operating Temperature	-25° C to +50° C
Range Humidity	0 to 90% rH (non-condensing)
Storage Temperature Range	-40° C to +50° C
Load Element	2 each, 1600 watts, 120 VAC
Base Connectors	Standard KWH meter
Size	7 1/4" W x 7 1/4" D
Weight	Net 6 lbs., shipping 8 lbs.

ABOUT THE COMPANY

H.J. ARNETT INDUSTRIES, L.L.C., IS AN OREGON COMPANY WHICH MANUFACTURES AND DISTRIBUTES PRODUCTS FOR THE ELECTRIC UTILITIES, TELECOMMUNICATIONS, AND CONSTRUCTION INDUSTRIES.

FOR OVER 40 YEARS, THE COMPANY HAS WORKED CLOSELY WITH ITS CUSTOMERS TO DEVELOP PRACTICAL PRODUCTS GEARED TO SOLVING EVERYDAY PROBLEMS FOR UTILITIES AND INDUSTRY.

THE COMPANY'S LINE OF INSTRUMENTS HAS GROWN OUT OF DIRECT DISCUSSION WITH AND RESPONSE TO LINEMEN AND ENGINEERS. WE WELCOME YOUR INQUIRIES AND COMMENTS.

AND CHECK OUT THE COMPLETE LINE OF SERVICE CONDUCTOR TEST INSTRUMENTS

THE MEGA BEAST
80 AMP SERVICE CONDUCTOR TESTER

THE SUPER BEAST
20 AMP SERVICE CONDUCTOR TESTER

MINI BEAST
8 AMP, 2-WIRE SERVICE CONDUCTOR TESTER

THE PINPOINTER
UNDERGROUND SECONDARY FAULT LOCATOR



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