



ZONIT 

Z-ATS INDUSTRIAL 

PAT. WWW.ZONIT.COM/PATENTS

GREEN ON A

INPUT A CIRCUIT RESET

INPUT B CIRCUIT RESET

BLUE ON B

ASSEMBLED IN MX

UL LISTED I.T.E. E340237

CE

PN: ZAI-Z000001
RATING: 220-240V 50-60Hz 10A
SN: CA040000000

A INPUT

OUTPUT

B INPUT

DISCONNECT BOTH INPUTS BEFORE SERVICING

Zonit® Z-ATS-IND™

Users Guide

Version 1.1

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Attention: Safety Information

There is a risk of personal injury from electrical shock and hazardous energy levels. Installation and maintenance of this product must be performed by individuals who are trained and knowledgeable about the procedures, precautions and hazards associated with AC power products.

To reduce the risk of electrical shock and/or equipment damage when installing or servicing this product:

- *The Z-ATS-IND™ unit must be disconnected from the A and B power input sources and the load(s) attached to its output.*
- *Do not overload the Z-ATS-IND™ unit by attaching an electrical load to its output that draws more current than the Z-ATS-IND™ is rated to deliver.*
- *Proper grounding of the branch circuits supply power to the Z-ATS-IND™ and the connected load must be provided.*

PRODUCT OVERVIEW

Product ID: Zonit® Automatic Transfer Switch Industrial (Z-ATS-IND™)

Model: Z-ATS-IND-XX-XXX (All models)

Description: The Z-ATS-IND™ is a small form factor, “zero-U” mounting, auto-ranging, automatic transfer switch for (88-277VAC) service.

This product is designed for use with devices requiring high to ultra high power path reliability, with quick failover times and is suitable for microprocessor controlled industrial devices. It has an extended operating voltage range and higher temperature operating limits suitable for industrial and harsh environments.

PRODUCT FEATURES

- The Z-ATS-IND™ can be ordered with wire harness inputs & output, which is the base model. This is the most convenient way to connect to terminal blocks, which are the most common power wiring connection in industrial control cabinets. Corded connections are available as an option, using IEC standard or Zonit IEC locking power cords. Other wire harness and cordcap options are available as custom configurations.
- The unit is designed for “zero-U” mounting in most applications. The “T”-slot features of the case are designed to accept a 35mm “top-hat” style DIN rail. The most common DIN rail attachment method is to install a DIN rail adapter (available from Zonit) to the case, using the “T-slots” and then affix the unit to the DIN rail. This allows the unit to be placed on and removed from the DIN rail, for ease of installation and maintenance.
- The terminal block versions and the power input plugs in corded versions of the Zonit Z-ATS-IND™ are labeled so that the user knows which is the **A** source and which is the **B** source. Further the input plugs can be color coded as desired by the user to key the input plugs to any color-coding scheme used in their application to identify power sources.
- The Zonit Z-ATS-IND™ is designed to always use the **A** source if it is available and of acceptable quality. This allows electrical installers or designers to know and plan for the load on each power source - a requirement for power capacity management.
- The unit will illuminate a green LED when the A power source is in use. It will illuminate a blue LED when B power source is in use. The blue LED will blink if the unit is on the A power source, but the B power source is present and available.
- Under-voltage and over-voltage conditions are detected and will initiate a switch from the **A** to **B** source. This helps protect against downtime and makes it easy to use line + UPS power sources without risking downtime.
- The Z-ATS-IND™ has voltage level sensing on the **A** side only and will switch to the **B** side if the **A** input voltage is less than 88VAC or greater than 305VAC. Once the **A** side voltage goes back in range for at least 6 seconds, (either greater than 88VAC or less than 305VAC), the unit will switch back to **A** side power.
- For applications that require a restricted operating voltage range, the Z-ATS-IND™ can be custom ordered in a configuration that will switch from the **A** to the **B** source when the lower or upper limits of the voltage range are exceeded. An example would be a 200-250V operating range. Note that units with custom operating voltage ranges will have different transfer & return values from those specified in the bullet above.
- The Zonit Z-ATS-IND™ comes in a standard internally fused model that protects the unit from being permanently damaged by overloads. The 10A model can optionally be equipped with two cigarette-style circuit breakers one each for the **A** source and the **B** source. The unit will disconnect the attached load from the active service input, (either the **A** or **B** source), if the current drawn by the load exceeds the amperage rating of the unit for a reasonable duration of time. This will pop up the center plunger of the tripped circuit breaker. After removing the excessive connected load, the Z-ATS-IND™ can then be reset by pressing the tripped circuit breaker center plunger back in. If the circuit breaker has sufficiently cooled, the center plunger will stay in and the unit will supply power to the outlet. If the circuit breaker plunger does not stay in, the circuit breaker has not sufficiently cooled off, wait and retry later. Note that the circuit breakers can not be manually opened, they can only be tripped by an overload condition.

PRE-INSTALLATION CONSIDERATIONS

Prior to deployment of the Z-ATS-IND™, to insure the unit will function properly in its intended application, the following site considerations should be reviewed.

POWER TYPE & MOUNTING OPTIONS

The Z-ATS-IND™ comes with either wire harness I/O cords or country or application specific input and output cords with cordcaps. For example, IEC C14 normal or Zonit zLock™ locking plugs could be used on both its **A** and **B** input cords, which are to be connected to single phase 100-250VAC power sources. The output is most commonly an IEC320 C13 female normal or Zonit locking plug, which is a common input to many electronic devices.

The Z-ATS-IND™ can be used in several configurations:

- *Direct Terminal Block Attach* – The Z-ATS-IND™ is connected directly to equipment via its wiring harness cords..
- *Indirect Terminal Block Attach* – The Z-ATS-IND™ can be connected indirectly to equipment via a suitable terminal block. The Z-ATS-IND wire harness is connected to the terminal block. Consult your local electrician to insure compliance with all applicable safety standards.
- *Direct Plug Feed* – The Z-ATS-IND™ can be connected to electrical sockets via the supplied power cords on corded models of the Z-ATS-IND™.

SITE PREPARATION

Site preparation with the Z-ATS-IND™ is simple and easy to implement.

The site must have two separate power sources with appropriate wiring for each power source that the Z-ATS-IND™ can be connected to via suitable agency approved power wiring or receptacles. The Z-ATS-IND™ must be fed from both the **A** and **B** sources by single phase 88-277VAC power of suitable capacity. Make sure that the **A** and **B** socket-outlets to be used are installed near the equipment the Z-ATS-IND™ will power and are easily accessible. Also make sure that they are identified for staff performing the Z-ATS-IND™ installation

Note! The maximum rated voltage of the Z-ATS-IND is dictated by the power cord endcap type, when corded I/O is used.. The maximum rated operating voltage of the endcaps is the maximum allowed voltage that is marked on the case. This is the voltage limit that must be observed when installing and using the unit.

- The Z-ATS-IND™ should be wired or plugged in such that the **A** power source is the preferred source for normal operations for the equipment being powered. The **B** power source is the failover power source. This point is **important**, the Z-ATS-IND™ only monitors power quality when drawing on the **A** power source.
- Insure that the needed power capacity that will be drawn by the Z-ATS-IND™ is available in the both the **A** and **B** circuits the Z-ATS-IND™ is connected to. This is necessary for the Z-ATS-IND™ to failover correctly and insure connected load uptime.

INSTALLATION

- Remove the Z-ATS-IND™ from its packaging and verify that the unit is intact and undamaged and is the model ordered for the desired application. The packaging should contain the Z-ATS-IND™ unit, and any optionally ordered accessories.
- Connect the Z-ATS-IND™ main unit via the wiring harness or supplied output plug into the equipment to be powered, directly or indirectly. If the locking plug on the Z-ATS-IND™ will not insert because of clearance issues, use an optional accessory, the *IEC C13 Extension Kit* (Part Number: Z-ATS1-EXT-C13). This C13 extension cord can be used to make the connection between the equipment and the Z-ATS-IND™. Do **NOT yet** connect either the **A** or **B** input sources of the Z-ATS-IND™, that will be done at a later step.

- If it is desired or required to mount the Z-ATS-IND™ to a DIN rail, then insert the 35mm top-hat DIN rail into the compatible provided case slots or use the optional *μATS DIN Rail Adapter Kit* (Part Number: Z-ATS-IND-DIN-(1,2,3)) and follow the included instructions to physically attach the Z-ATS-IND™ to the DIN rail.
- Check that the equipment is turned off if a power supply switch is on the equipment.
- Now connect the Z-ATS-IND™ to the **A** power source using either the wiring harness or the integral power cord. The **A** power source should be shutdown when making this connection. Remember that the Z-ATS-IND™ will always use the **A** power source when it is available. Then connect the Z-ATS-IND™ to the **B** power source using either the wiring harness or the integral power cord. The **B** power source should be shutdown when making this connection. Next activate the **A**, then the **B** input power sources. The Z-ATS-IND™ will turn on and the Z-ATS-IND™ LED indicators will show that the unit is operational.

Note: If the connected load has no power switch it will turn on as soon as the **A** side Z-ATS-IND™ power source is connected.

- If the connected load has a power switch, turn it on.

DE-INSTALLATION

- Shutdown then power off all the equipment that the Z-ATS-IND™ is supplying power to. **Be sure** to follow the manufacturers recommended shutdown procedure for all equipment. Shutdown both the **A** & **B** input power sources to the Z-ATS-IND™ and insure they are inactive. If the unit has been physically secured, de-install the retention kit. Disconnect the wiring harness connections to the unit or unplug the Z-ATS-IND™ input power cords, in both models, first the **B** side, then the **A** side. Now remove the Z-ATS-IND™ from the installation location.

Note: If the connected load has no power switch it will turn off as soon as both the **A** & **B** input power sources to the Z-ATS-IND™ unit are disconnected.

Z-ATS-IND™ OPERATIONAL INDICATORS

The Z-ATS-IND™ has 2 LED indicators, green and blue. They are used as follows to indicate the operational state of the μATS™.

- Green LED lit: The Z-ATS-IND™ is operating normally and drawing power from the **A** power source.
- Blue LED lit: The Z-ATS-IND™ is operating normally and drawing power from the **B** power source. The primary source is offline and not available or in an over-voltage or under-voltage condition.
- * Blue LED blinking: The Z-ATS-IND™ is operating normally and drawing power from the **A** power source. The **B** secondary source is online and available for failover.
- No LEDs lit: The Z-ATS-IND™ is not receiving power from the **A** or **B** sources.
- No Output power but Green and/or Blue LEDs are lit: The Z-ATS-IND™ has been overloaded and blown one of its protective fuses (very hard to do) or tripped its circuit breakers. Examine the **A** & **B** cigarette-style circuit breakers and determine if either has tripped, if so, the central plunger in the circuit breaker will be sticking out. If yes, then remove the overload from the Z-ATS-IND™ output and reset the tripped circuit breaker by pressing in the central plunger on the circuit breaker. If it will not stay in, wait for a few minutes for the circuit breaker to cool and try again.

TROUBLESHOOTING

The Z-ATS-IND™ is designed and tested for the highest reliability possible. Factory testing is extensive, and all circuits are fully tested for load capacity, isolation, circuit breaker trip limits, etc.

This unit contains no serviceable parts and must be returned to the manufacturer for repair or replacement.

If any condition exists that would indicate a problem, follow this process:

- 1) Check **A** and **B** source panel(s) (or PDU) circuit breakers. Be sure the **A** and **B** branch circuit breakers are fully engaged. Snap them off and back on again. Now check the LED indicators at the μ ATS™.
- 2) Using a different Z-ATS-IND™ unit if available, can be useful in determining if the circuit is at fault, or if the Z-ATS-IND™ is the source of the problem. If the same results are attained with two units, the problem is likely to be in the branch feeder circuit.
- 3) If a problem is indicated on only one circuit feeding the Z-ATS-IND™, or at a particular receptacle on a plugstrip, move the input plug(s) to the Z-ATS-IND™ to a different circuit or receptacles on a plugstrip that test OK.
- 4) **The following tests should be done by a qualified electrician only.** Using a suitable volt meter, test the **A** and **B** power sources.
 - a) Verify Hot to Neutral or Hot to Hot on the **A** power input source is greater than 88V and less than 277V.
 - b) Verify phase to neutral voltages of 88 to 277 volts.
 - c) Verify 0.0 volts from Neutral to Ground.
 - d) Verify less than 1 ohm from Neutral to Ground.
- 5) If any fault is located with the branch feeder circuit, have a certified electrician correct it.
- 6) If the branch feeder circuit checks out as OK and a problem persists at the Z-ATS-IND™, return it to the factory.

OPTIONAL ACCESSORIES

The Zonit Z-ATS-IND™ is available with the following optional accessories.

- 1) Z-ATS-IND™ DIN Rail Mounting Kit – Order Part Number
Z-ATS-IND OPTION – (DIN-(1,2,3))

This kit consists of a single DIN rail adapter that is compatible with the “T”-slots provided on the outside of the Z-ATS-IND™ aluminum case. The required hardware is provided.

Order the type of DIN adapter that is required for the mounting orientation you need.

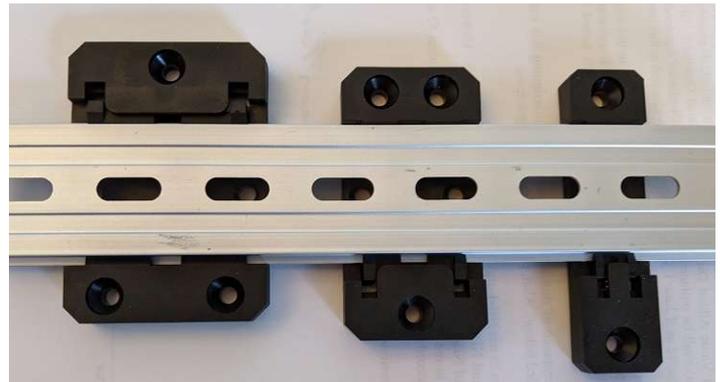
- Din Rail Adapter #1
Used to mount the Z-ATS-IND™ parallel to the DIN rail.
- Din Rail Adapter #2
Used to mount the Z-ATS-IND™ parallel to the DIN rail
- Din Rail Adapter #3
Used to mount the Z-ATS-IND™ at 90 degrees to the DIN rail.

- 2) *IEC C13 Extension Kit* – Order Part Number: μ ATS1-EXT-C13

This kit consists of an IEC C14 to IEC C13 extension cord. It is used to connect the Z-ATS-IND™ to the equipment being powered in situations where clearance to plug it in directly is an issue or it is desired to place the Z-ATS-IND™ in a location where its indicators can more conveniently be viewed.

- 3) *IEC C14 Extension Kit* – Order Part Number: PAT-C14-1

This kit consists of an IEC C14 male to IEC C14 female extension cord. It is used to connect the Z-ATS-IND™ to a plugstrip or other device that is designed to plug into a IEC C14 receptacle.



Type #1, #2, #3 - 35mm Top-Hat Style DIN Rail Adapters

WARRANTY

The Z-ATS-IND™ made by Zonit Structured Solutions, LLC in the U.S.A. is warranted to be free of defects in materials and workmanship for a period of 3 years from date of purchase. If the product becomes defective during the warranty period, we will elect to either repair or replace it free of charge. After contacting Zonit Structured Solutions for a return authorization, send the product (with the original proof of purchase and freight prepaid) to Zonit Structured Solutions, LLC, 1790 30th Street #140, Boulder, Colorado, 80301.

This warranty does not include repair or replacement of any connected equipment. This warranty excludes damage to Zonit product if a surge or spike reaches the product through an unprotected source connected to it. It does not apply to any product which has been repaired or altered in any manner by anyone other than Zonit Structured Solutions, LLC or to any product which has been installed, connected, used, or otherwise adjusted other than in accordance with written instructions furnished by Zonit Structured Solutions, LLC. Zonit Structured Solutions, LLC shall also not be obligated to repair or replace the product which is found to be in need of repair because of damage resulting from accident or misuse. Zonit Structured Solutions, LLC makes no other express warranty for the product. No agent, representative, dealer, or employee of Zonit Structured Solutions has the authority to increase or alter the obligations or limitations of this warranty.

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