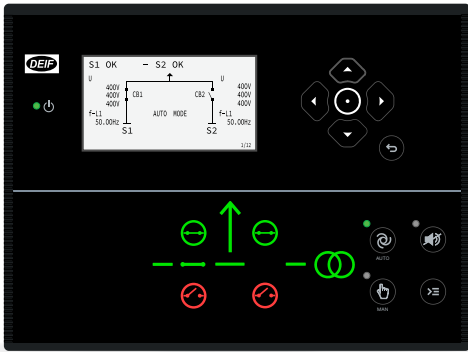


# iE 150 ATS



## About iE 150 ATS

The iE 150 Automatic Transfer Switch (ATS) controller can automatically transfer the power supply when it detects a failure.

The controller can handle all types of power sources and you can select how the controller should respond to a failure. The ATS can control up to three breakers, which means that you can use it in a wide range of emergency power solutions.

The values and alarms are shown on the LCD display screen, which is sunlight-readable. You can easily control the breakers from the display units. Alternatively, use the communication options to connect to an HMI/SCADA system.

## ATS features

### Power sources

The ATS can handle all types of power sources when in Source-Source mode. For example, two mains sources or a combination of a genset with battery energy storage system and a renewable power source. The controller can send a start and stop signal to both sources.

### Operating options

The ATS uses Automatic Mains Failure (AMF) logic and user-defined control signals to control and monitor the application. The controller can monitor the primary power source for irregular voltages or frequencies, and switch to the secondary source if an irregularity is detected.

### Blackout prevention

The ATS includes a closed transition function that prevents blackouts during source switching. The function keeps the breakers of both power sources closed for a user-defined period and enables short-time paralleling.

Functions	Stand-alone	Core
→ Open transition	●	●
→ Open delayed transition	●	●
→ Open in-phase transition		●
→ Closed transition		●
→ Closed transition with an adjustable overlap time		●
→ Priority of source: <ul style="list-style-type: none"> <li>• Prioritise S1</li> <li>• Prioritise S2</li> <li>• Shift priority at blackout</li> <li>• Prioritise both S1 and S2</li> <li>• Cyclic mode</li> </ul>	●	●
→ Power sources: <ul style="list-style-type: none"> <li>• Mains/mains</li> <li>• Genset/mains</li> <li>• Mains/genset</li> <li>• Genset/genset</li> </ul>	●	●
→ Elevator switch	●	●
→ External control of mains breaker	●	●
→ Protections	●	●

## Breaker control

### 1-breaker applications

You can configure 1-breaker applications with 2 positions or 3 positions. There is no neutral in applications with 2 positions. In applications with 3 positions, there is a neutral position.

### 2-breaker applications

In a 2-breaker application, the controller automatically changes the supply if the primary supply fails.

### 3-breaker applications

The 3-breaker setup is for two sources and two load points. Use it in medium voltage ATS systems, such as in data centres. You can set source 1 or both sources as the primary source. A 3-breaker application allows you to open and close a bus tie breaker between the power sources.

The mimics on the display depend on the sources selected and the breaker configuration. For example, the display mimics for a mains/generator application are different from the generator/mains application.

# Application examples

## 1-breaker applications

### One breaker and 2 positions

The diagram shows two Gensets at the top, each connected to a breaker labeled S1 and S2 respectively. These breakers are connected to an ATS unit. The ATS has two positions, 1 and 2, and is connected to a load. The load is also connected to the ATS via breakers S1 and S2.

### Generator-mains example

The control panel features a DEIF logo and a power button. The display shows 'S1 OK' and 'S2 OK'. Below the display is a central navigation pad with four directional arrows and a central button. To the right of the pad are buttons for 'AUTO' and 'MAN' modes. The panel also has a speaker icon and a menu icon.

### One breaker and 3 positions

The diagram shows a Mains connection at the top, connected to a breaker labeled S1. A Genset is connected to the ATS via a breaker labeled S2. The ATS has three positions, 1, 2, and N, and is connected to a load. The load is also connected to the ATS via breakers S1 and S2.

### Mains-generator example

The control panel features a DEIF logo and a power button. The display shows 'S1 OK' and 'S2 Black'. Below the display is a central navigation pad with four directional arrows and a central button. To the right of the pad are buttons for 'AUTO' and 'MAN' modes. The panel also has a speaker icon and a menu icon.

# Application examples

## 2- and 3-breaker applications

### Two breakers

**Mains-mains example**

The schematic diagram on the left shows two mains connections, S1 and S2, connected to an ATS (Automatic Transfer Switch) unit. The ATS is connected to two breakers, CB1 and CB2, which are in turn connected to a busbar system. The control panel on the right displays the DEIF logo and a power indicator. The main display shows a schematic of the two-breaker system with S1 and S2 both in 'OK' status. The status of the breakers is indicated by green and red symbols. The panel includes a central navigation pad and buttons for 'AUTO' and 'MAN' modes.

### Three breakers

**Mains-mains example**

The schematic diagram on the left shows two mains connections, S1 and S2, connected to an ATS unit. The ATS is connected to three breakers: CB1, BTB (Breaker Transfer Breaker), and CB2. The control panel on the right displays the DEIF logo and a power indicator. The main display shows a schematic of the three-breaker system with S1 and S2 both in 'OK' status. The status of the breakers is indicated by green and red symbols. The panel includes a central navigation pad and buttons for 'AUTO' and 'MAN' modes.

# Technical specifications

## AC measuring

- Voltage: 100 to 690 V phase-to-phase (10 to 135 %),  $\pm 1$  %
- Current: 1 A or 5 A (2 to 300 %),  $\pm 1$  %
- Frequency: 3.5 to 75 Hz

## Power supply

- Nominal voltage: 12/24 V DC
- Operating range: 6.5 to 36 V DC

## Inputs and outputs

- Digital inputs: 12 x (max. +36 V, min. -24 V)
- Digital outputs:
  - 2 x (15 A inrush, 3 A continuously)
  - 10 x (2 A inrush, 0.5 A continuously)
  - Common: 12/24 V DC
- 4 x analogue inputs

## Environmental specifications

### Operating temperature:

- -40 to +70 °C (-40 to +158 °F)

### Storage temperature:

- -40 to +85 °C (-40 to +185 °F)

## Communication

- RS-485 Port 1
- RS-485 Port 2
- RJ45 Ethernet
- USB

## Approvals

- CE
- UL/cUL Listed to UL/ULC6200:2019, 1. ed. Controllers for Use in Power Production

**NOTE** Refer to [deif.com](http://deif.com) for the most recent approvals.

## Protections

2 x Reverse power .....	ANSI 32R
2 x Fast over-current.....	ANSI 50P
4 x Over-current .....	ANSI 50TD
2 x Over-voltage .....	ANSI 59
3 x Under-voltage.....	ANSI 27P
3 x Over-frequency .....	ANSI 81O
3 x Under-frequency .....	ANSI 81U
1 x Unbalance voltage.....	ANSI 47
1 x Unbalance current .....	ANSI 46
5 x Overload.....	ANSI 32F
1 x Breaker open failure.....	ANSI 52BF
1 x Breaker close failure .....	ANSI 52BF
1 x Breaker position failure.....	ANSI 52BF
1 x Phase sequence error .....	ANSI 47
1 x Positive sequence (mains) voltage low .....	ANSI 27
2 x Directional over-current.....	ANSI 67
1 x Negative sequence voltage high.....	ANSI 47
1 x Negative sequence current high .....	ANSI 46I <sub>2</sub>
1 x Zero sequence voltage high .....	ANSI 59U <sub>0</sub>
1 x Zero sequence current high.....	ANSI 50I <sub>0</sub>
1 x Power-dependent reactive power.....	ANSI 40
1 x IEC/IEEE inverse time over-current .....	ANSI 51
1 x Emergency stop	
1 x Breaker 1 external trip	
1 x Breaker 2 external trip	
1 x BTB breaker external trip	
Synchronisation failure alarms	
1 x Hz/V failure	
1 x Not in Auto	



Scan to learn  
more about DEIF

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