EcoStruxure™
Innovation At Every Level

Auto Transfer System for your critical power buildings

Ensuring power availability at any time

How EcoStruxure™ Building can help critical buildings ensure MV Power Distribution at all times.

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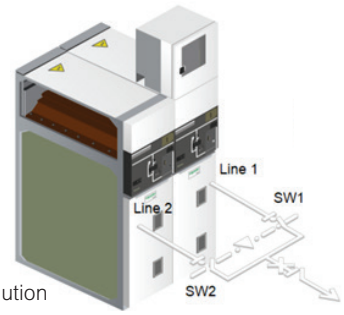
Ensure power availability for critical buildings when power outages occur on the utility grid

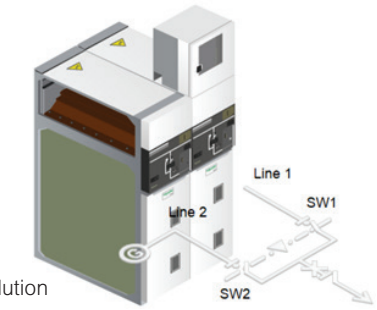
Power availability is a key criterion for any critical buildings. An ATS (Automatic Transfer System) allows a critical load to have increased supply availability by switching between a primary and a backup MV supply.

ATS maintains the power in the event of a permanent MV feeder outage, by transferring the load and restoring power using an alternate utility feeding supply or a standby generator.

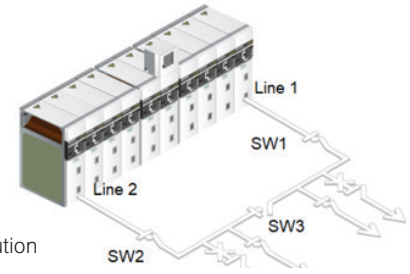
Inside a building or a critical site, our EcoStruxure™ application solution can provide a resilient Medium Voltage (MV) distribution network. This can withstand the impact of power outages due to external causes such as the effects of severe weather conditions.



ACO solution



GEN solution



BTA solution

EcoStruxure ATS solution benefits

- Ease the monitoring, control and maintenance of your Medium Voltage network.
- In case of 1 MV line loss:
  - restore total supply in 300 ms with SM6 NSM.
  - restore total supply as soon as the generator has started (within a guaranteed time and without any human operation).

EcoStruxure ATS solution connected products

- SM6 NSM, SM6 panel
- RM6, FBX, 3rd part MV switchgears
- Easergy T300 with ATS function
- Sensors (CTs, VPIS)

EcoStruxure ATS solution architectures

ACO - Automatic transfer between 2 MV lines

Standard ACO (Auto Change Over) transfers the power source to the alternate supply if the preferred source is lost. It may be set to automatically return to the preferred source when restored.

GEN - Automatic transfer with a standby generator

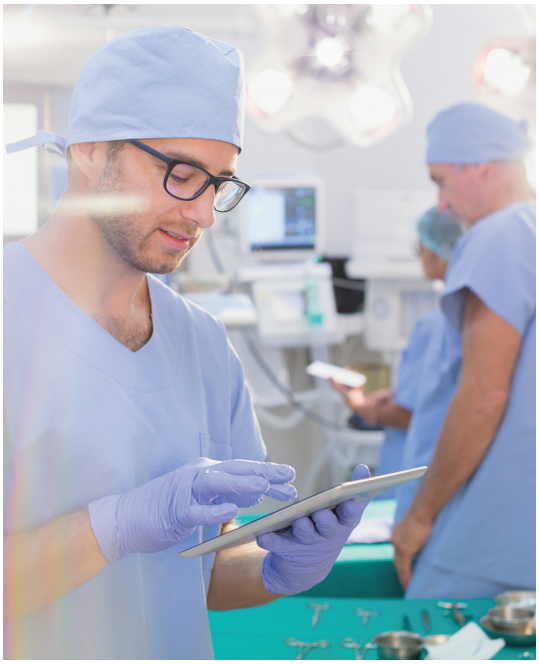
GEN (automatic transfer to a GENset) starts the standby generator upon loss of the distribution utility MV power source outage. An option is to combine two separate MV sources coming from the distribution utility, and one standby generator.

BTA - Automatic transfer and coupling

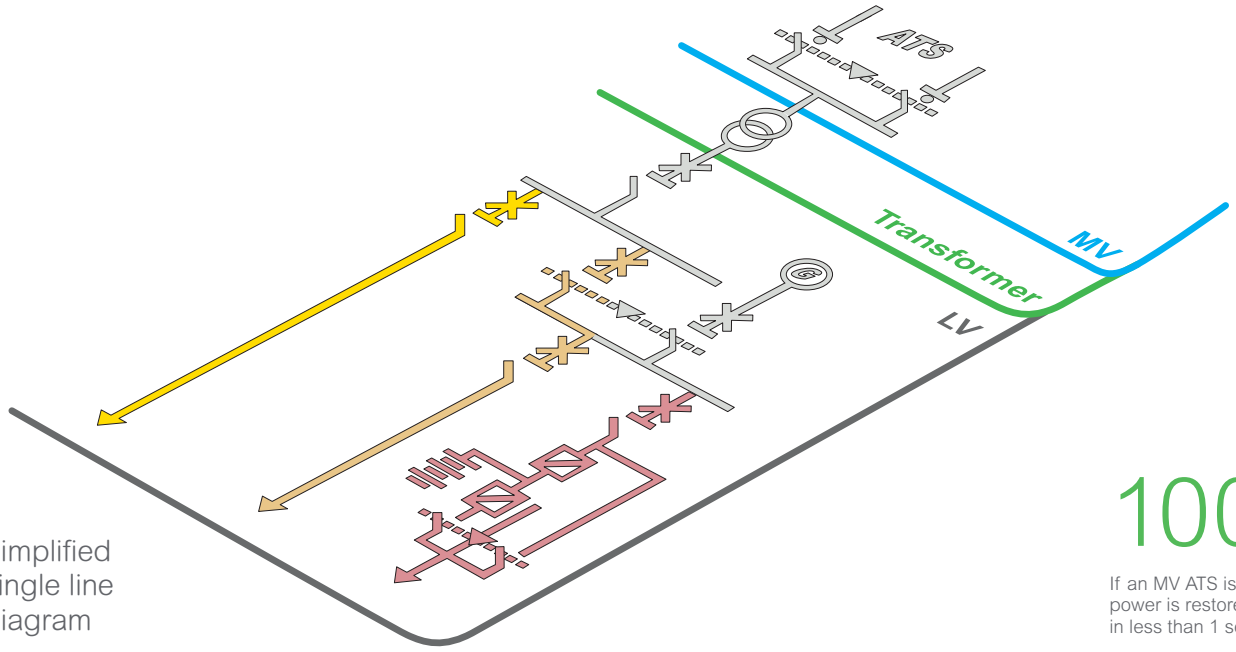
BTA (Bus-Tie Automatic transfer) isolates the faulty MV power source and switches both loads to the healthy MV power source, by opening SW1 (or SW2) and closing SW3 (busbar coupling).

Hospitals:

Help increase the reliability of your electrical network when lives are at stake!



Delivering critical care to patients depends upon uninterrupted power. Areas such as operating rooms, emergency departments, and intensive care units require constant power to stabilize and treat critically ill people.



Simplified single line diagram

100%

If an MV ATS is installed, the power is restored in all zones in less than 1 second.

What if there are no MV ATS solution?

In critical areas (operation rooms, intensive care units, IT critical systems) where no outage is tolerated, the continuity of service is ensured by UPS. However, the duration of the backup power is limited by the size of the UPS batteries.

The UPS system is generally backup with a LV standby generator, before UPS batteries are empty. However, (1) starting the LV generator takes time and (2) while its autonomy is quite extended, it is a costly solution that requires maintenance and, (3) its power delivery capacity is limited.

How does it impact your site?

The orange zone is reenergized only several minutes after the outage and the yellow zone is not reenergized until the MV power supply source has returned.

Shopping malls:

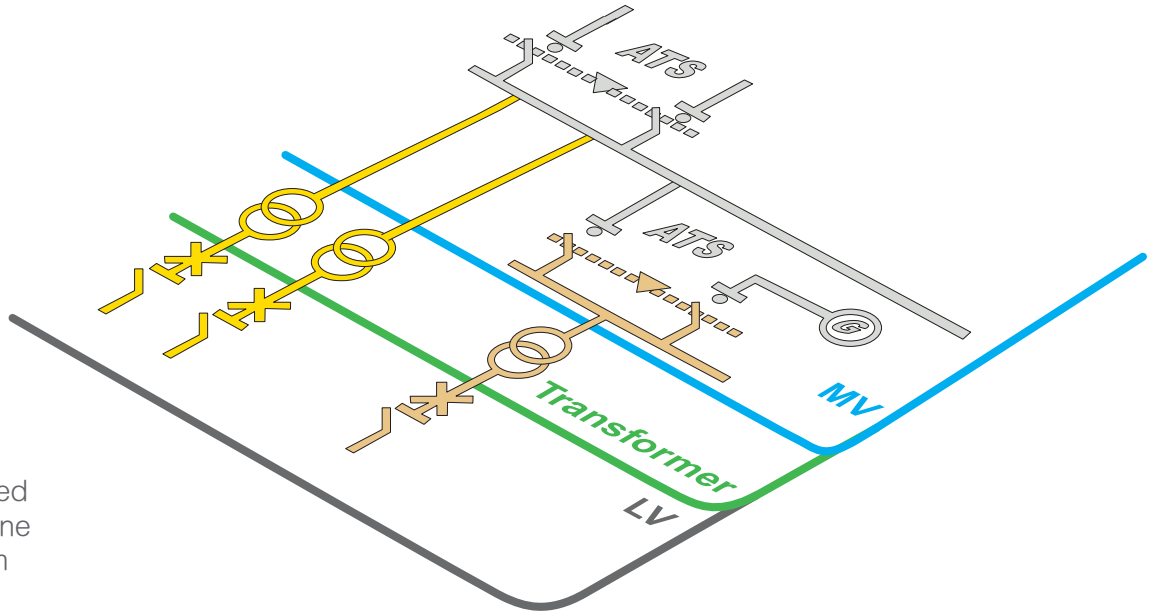
Preserve your customers' satisfaction!

The smooth operation of a shopping mall depends on many factors, including the reliability of its electrical network.

To ensure your revenues, you need to:

- Attract and retain shoppers.
- Increase the loyalty of the tenants of the various chains, to optimize the use of store space.

Doing so guarantees a high level of satisfaction and make it a pleasure to shop.



Simplified single line diagram

What is there are no MV ATS solution?

In other power critical applications where no outage is tolerated, (hospital operating rooms, critical care facilities or critical IT systems) the power continuity is ensured by Uninterrupted Power Supply (UPS) solutions. However, the duration of the backup power is limited by the size of the UPS batteries.

The UPS system is generally backup with a LV standby generator, before UPS batteries are empty. However, (1) starting the LV generator takes time and (2) while its autonomy is quite extended, it is a costly solution that requires maintenance and, (3) its power delivery capacity is limited.

How does it impact your site?

The orange zone is reenergized only several minutes after the outage and the yellow zone is not reenergized until the MV power supply source has returned.

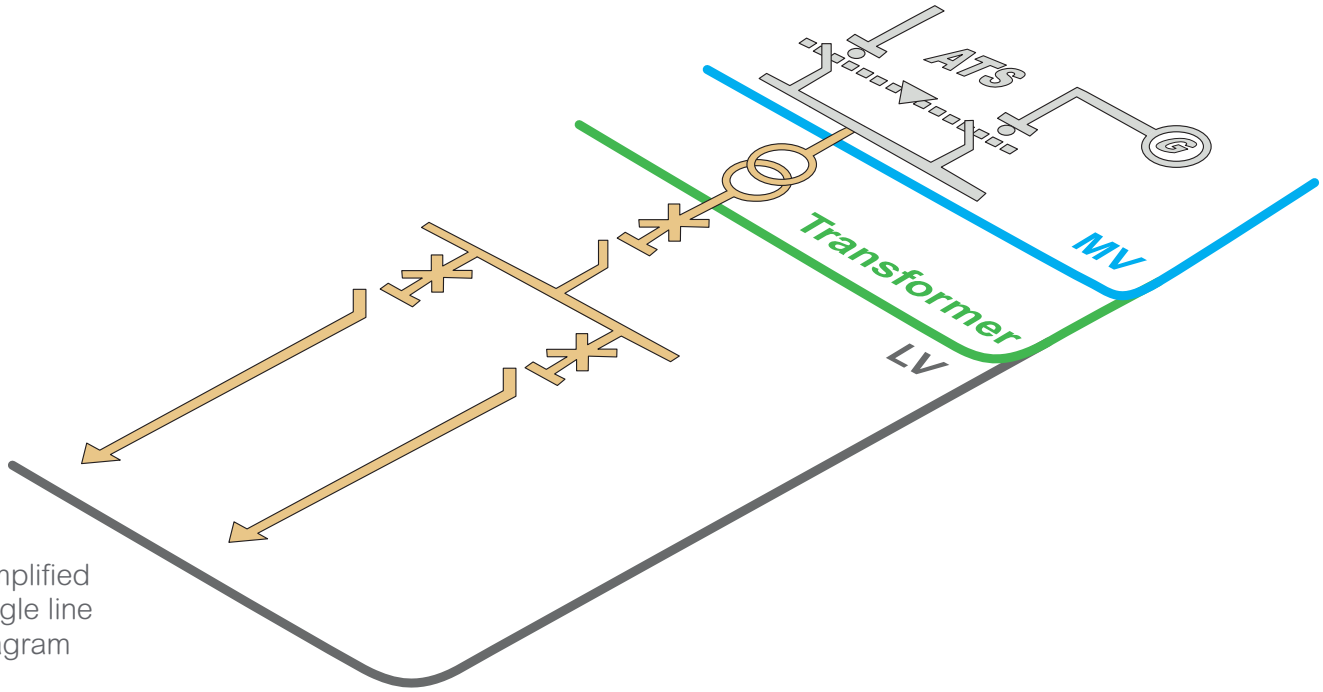
100%

If an MV ATS is installed, the power is restored in all zones in less than 1 second.

Critical infrastructures:

How to guard against shortfalls!

Because a single failure has the potential to generate considerable financial losses, continuity of service is a strategic challenge. Our ATS solution with SM6 switchgear will make sure that each activity gets the service continuity it needs.



Simplified single line diagram

In case of MV power interruption without ATS

If your industrial process is fed directly by a single MV supply, you need a MV back-up supply to avoid any power cut.

In this case, a manual start-up is needed. The power interruption's length depends on the time needed for human intervention (switch and switch back).

With ATS installed in the MV section

The power interruption is never longer than the set recovery time for switch and counter-switch operations. It is totally independent from any human intervention and the same recovery time is guaranteed.

0.3s

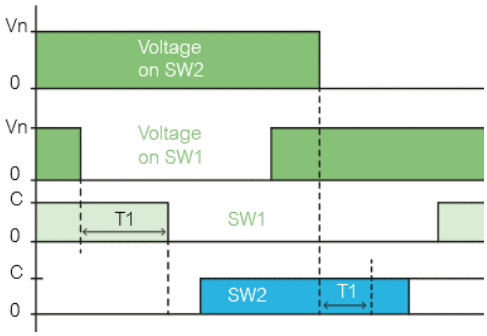
Typical time for power recovery with an SM6 MV switchgear.

Easergy T300 ATS solutions at a glance

ATS functions

An ATS system allows a critical load (such as a network section, a hospital, a shopping mall or a manufacturing plant) to have increased supply availability by switching between a primary and a backup supply.

- Automatically transfers between alternate supplies if one is lost
- Can be set to automatically return to the preferred supply when it is restored.



Example: ATS-ACO operating diagram

Product description

Easergy T300, a modular Remote Terminal Unit (RTU), is part of ATS solutions. Its open architecture supports different applications, from a single ATS to large substation management with third-party devices.

Functions	Easergy T300 (ACO)	Easergy T300 (GEN)	Easergy T300 (BTA)
Native in Easergy T300	●		
Using customizable IEC 61131-3 program		●	●
Back to normal source configurable/settable (self return mode)	●	●	●
Block transfer to one source configurable (no return mode)	●		●
Transfer with close transition configurable (parallel coupling mode)		●	●
Time slot to back to normal source		●	●
Load shedding capability		●	●
GENset test function (temporally start genset)		●	
Transfert lock on downsteam current fault detection	●	●	●
Push buttons (ATS ON/OFF, Remote/Local, source forcing,...)	●	●	●
Interlock on digital inputs	2	2	3

Modularity of the Easergy T300

Auto Transfer Switch application is controlled by the HU250 module and so activated globally for all the SC150 modules of Easergy T300.

Easergy HU250
Head Unit communication gateway

ATS logic controller embedded
Log of transfer sequence and alarms
Remote monitoring (Webmaster, SCADA)
Cybersecurity access control

Easergy SC150
Switch Controller

Control and monitoring of all switchgears
Advanced FPI* which can lock the transfer
MV voltage and current monitoring
Power measurement and power quality

Easergy PS50
Power Supply

ATS available even during a black out
Only one monitored battery needed to facilitate the maintenance

A Product Selector allows you to quickly build your configuration and ordering. More info on Easergy T300 web page.

*FPI: Fault Passage Indicator

Typical configurable solutions

All Easergy T300 modules offer DIN rail mounting for flexible RTUs integration design. Many accessories and sensors (as VPIS voltage sensors), available in the catalog, allow fast integration in any kind of application.

ATS requires a voltage presence/absence indication per switch. This can be calculated either from the voltage measurement (VDIS, VDS, LPVT or VT sensors) of SC150 or from an external information connected to DI6 digital input on the SC150.

Easergy T300 cabinet

Ready-to-use cabinets are available off-the-shelf for fast delivery and installation, and are also available to implement ATS solution on existing MV panels.

Easergy T300 with Schneider Electric MV cubicles

Install ATS system in secondary electrical distribution: Building on our proven RMUs – the RM6, FBX, Ringmaster, and modular cubicles SM6, Schneider Electric MV cubicles are seamlessly integrated with the Easergy T300.

The solution includes a set of fully integrated sensors for voltage, power, current, and temperature monitoring. For faster and simpler on-site assembly, the sensors are pre-installed where possible.

Easergy T300 open solution

A complete tailored and configured set of modules specifically designed to install ATS function in MV cubicles : retrofit, 3rd party switchgears.

EcoStruxure™
Innovation At Every Level

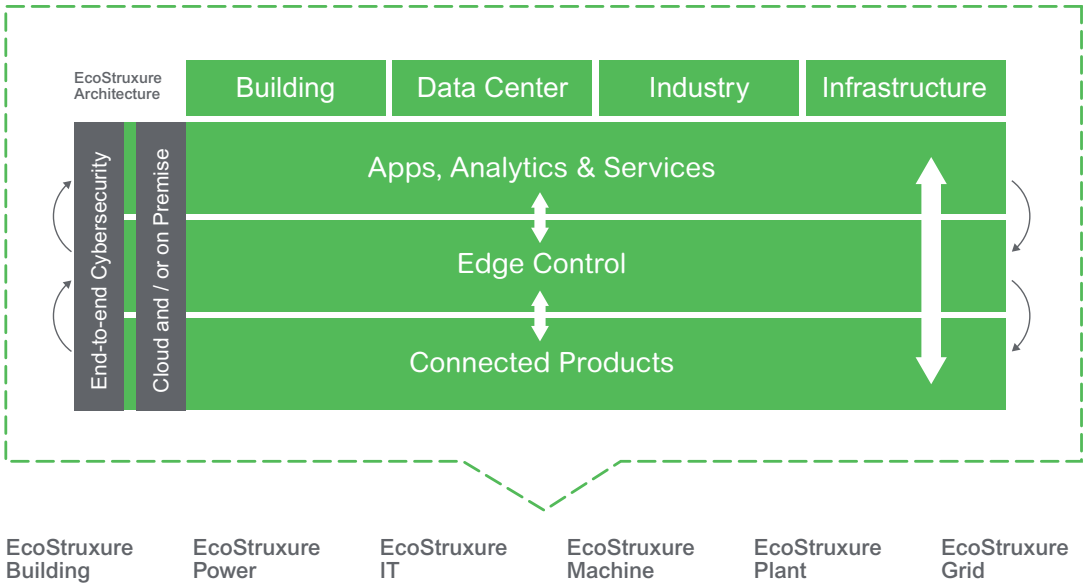
IoT-enabled solutions that drive operational and energy efficiency

EcoStruxure is Schneider Electric's open, interoperable, IoT-enabled system architecture and platform.

EcoStruxure delivers enhanced value around safety, reliability, efficiency, sustainability, and connectivity for our customers.

EcoStruxure leverages advancements in IoT, mobility, sensing, cloud, analytics, and cybersecurity to deliver Innovation at Every Level including Connected Products, Edge Control, and Apps, Analytics & Services. EcoStruxure™ has been deployed in 480,000+ sites, with the support of 20,000+ system integrators and developers, connecting over 1.6 million assets under management through 40+ digital services.

One EcoStruxure architecture, serving 4 End Markets with 6 Domains of Expertise



Connected Products

The Internet of Things starts with the best things. Our IoT-enabled best-in-class connected products include breakers, drives, UPSs, relays, sensors, and more. Devices with embedded intelligence drive better decision-making throughout operations.

Edge Control

Mission-critical scenarios can be unpredictable, so control of devices at the edge of the IoT network is a must. This essential capability provides real-time solutions that enable local control at the edge, protecting safety and uptime.

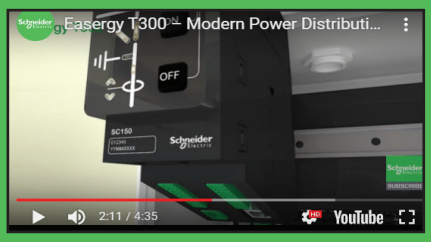
Apps, Analytics & Services

Interoperability is imperative to supporting the diverse hardware and systems in building, data center, industry, and grid environments. EcoStruxure enables a breadth of agnostic Applications, Analytics, & Services for seamless enterprise integration.

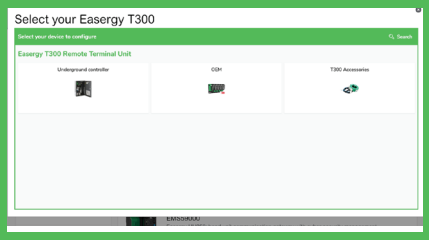
Find out more about EcoStruxure

schneider-electric.com/ecostruxure

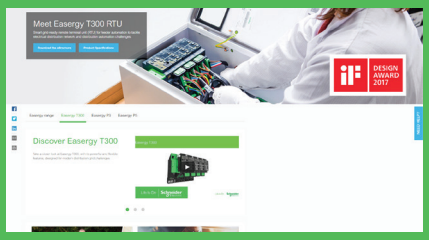
Learn More



Discover Easergy T300



Configure your Easergy T300 with ATS function



How to install ATS function in Easergy T300

Schneider Electric Industries

35, rue Joseph Monier - CS 30323
F92506 Rueil-Malmaison Cedex
FRANCE

www.schneider-electric.com

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