01

APPLICATION EXAMPLE: TRANSFER SOLUTION FOR A DATA CENTER

To keep data centers up and running, a reliable and redundant power supply is necessary. For this reason, the most common data center designs include two redundant power supplies for IT and mechanical loads. Switching the backup supply in and out is a critical task.

Around one-third of data centers with N+1 architecture (ie, where there is a backup module in case one fails) experience at least one outage per year, with an average estimated cost of $900,000 per event. The most usual cause of outages – up to one-third of the total number of occurrences – is a power supply failure inside the data center premises. In the event of a power outage, reliable automatic transfer switches (ATSs) are needed to transfer the power source for both IT loads and cooling systems to the backup power supply.

The fully integrated and flexible nature of the Emax 2 and TruONE combination provides a highly reliable ATS.

ABB's TruONE ATS is the world's first true ATS to package all the necessary sensors, controllers, switches and operator interfaces into a single, easy-to-install device that not only simplifies the installation and significantly reduces the installation time but also maximizes the ATS reliability →01.

The TruONE ATS has the same user interface and software environment as the ABB Emax 2 smart air circuit breaker, which allows it to take advantage of the high short-circuit performance of the Emax 2 to deliver a compact and reliable solution. For the first time, Emax 2 and its intelligent protection units integrate protection features and automatic transfer switching programmable logics into one single device.

Typically, Emax 2 circuit breakers would be placed in the main power distribution board as incoming protection devices. The Emax 2vs are equipped with embedded ATS functions – eg, delayed

Aleksandar Grbic
ABB Smart Power
Bergamo, Italy

aleksandar.grbic@
it.abb.com

—
01 TruONE is the world's first true ATS to package all the necessary sensors, controllers, switches and operator interfaces into a single, easy-to-install device that helps improve protection and makes installation simpler, more reliable and faster.

—
02 Advantages of the embedded ATS solution.

—
03 Solutions for chillers: TruONE ATSs are installed inside the chiller control panel to keep up the required cooling capacity in case of power outages.

—
04 This example shows a typical electric distribution design for a redundant data center, with a total facility input power of 1 MW and an IT load of 550 kW.

—

TruONE ATS is the first to package all necessary sensors, controllers, switches and interfaces into one, easy-to-install device.

transition (known as "open transition" in the IEC market), Main-Gen, etc. – to manage automatic switching in case of main power supply failure.

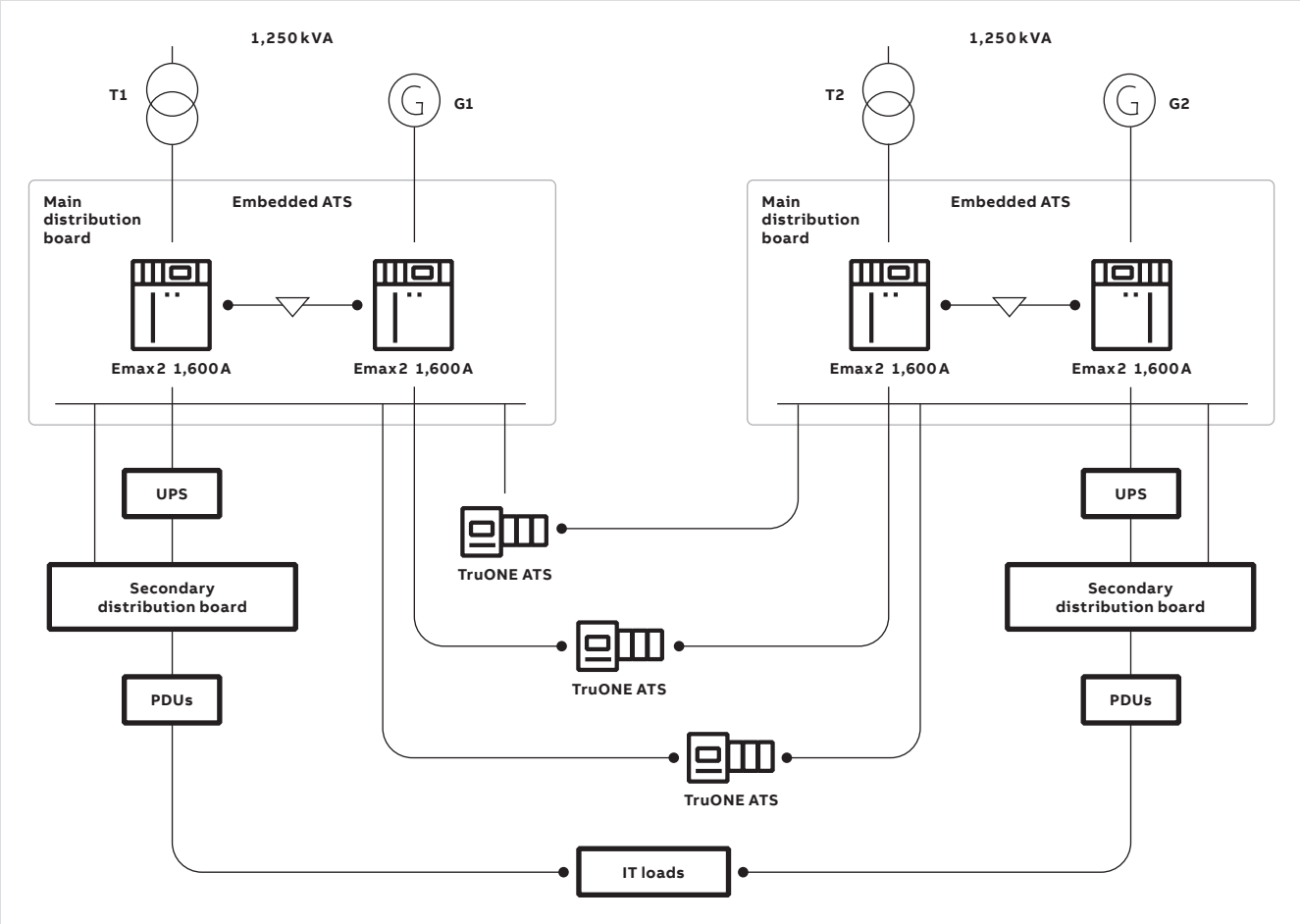
The fully integrated and flexible nature of the Emax 2 and TruONE combination provides a highly reliable ATS for even the most demanding data center applications →02–04. •

Feature	Benefit
Fully integrated solution, no need for external devices	Up to 30 percent space saving on the power switchboard
Plug-and-play, ready to go application template	95 percent estimated time and cost savings on ATS engineering
Self-diagnostics of all connections	Enhanced reliability thanks to fewer potential points of failure

02

Feature	Benefit
All-in-one solution, including the controller with detachable HMI	Installation time shortened by up to 80 percent
Automatic commissioning feature and pre-made configuration files	Shortens programming time by 80 percent and reduces risk of human error
Predictive maintenance and quickly replaceable critical modules	Significantly lower downtime and service costs

03



04