

The ATS & Generator Control Series

E24™

P180E



Automatic Transfer Switch Panels (ATS) are mainly electrical switches that switch the load between two sources. It is used when the client has a backup diesel generator and wants to integrate it with E24's Energy Storage System (ESS). ATSs supplies the input of the ESS and switches it between utility and diesel generator.

ATSs also controls the operation of diesel generators and provides protection functionalities both on inputs and output.

E24™

Applications

The ATS is used to provide the Energy Storage Solution with a two-sources input. It switches the system's input between utility when available and backup generator when needed.

ATSs also provide input/output overload protection, input/output short circuit protection, input/output disconnects, input phase loss protection, input phase reversal protection, input phase unbalance protection, input sources voltage drop/increase monitoring.

Unmatched Features

Overload Protection

The ATS is equipped with circuit breakers that trips once overloads occur.

Short Circuit Protection

The ATS is equipped with circuit breakers that trips once short circuits occur.

Phase Reversal/Loss/Unbalance & Low/High Voltage Protection

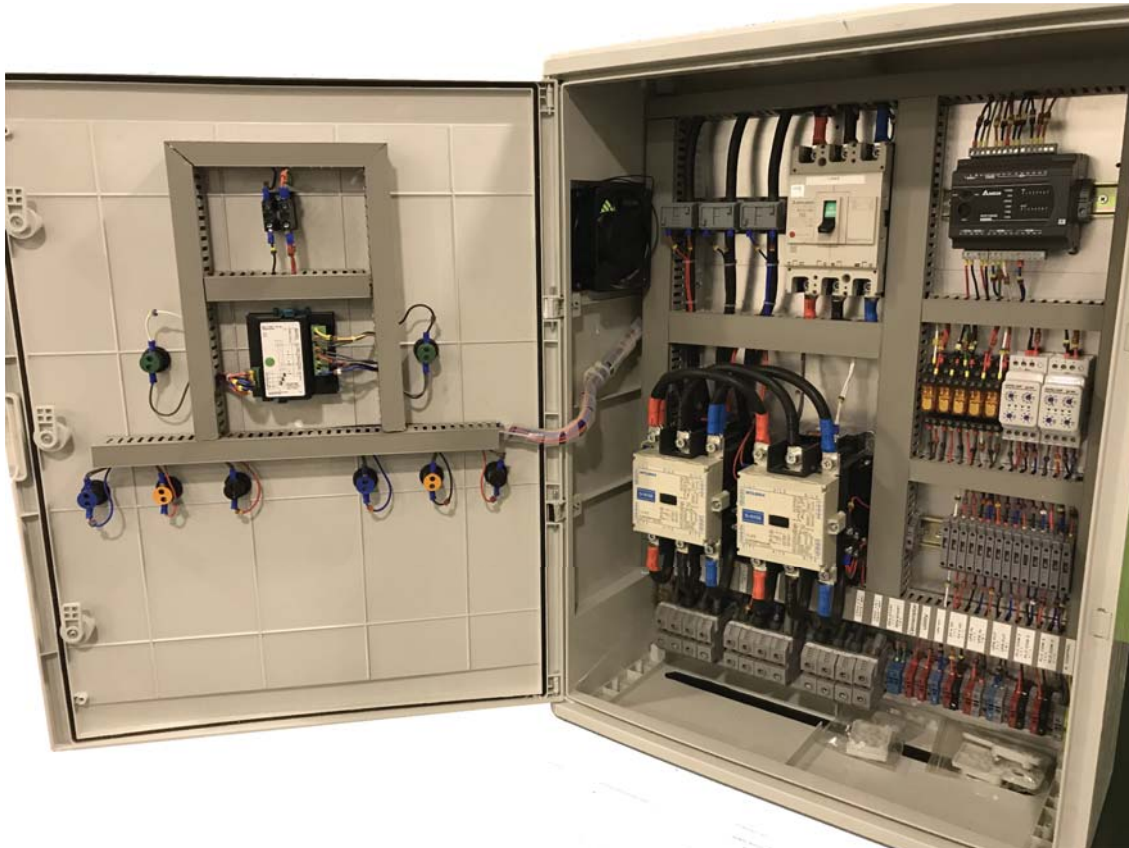
The ATS contains input phase relays that continuously monitors input phases and voltages and sends a signal to the main Programmable Logic Controller (PLC) that cuts off the corresponding input if phase errors or voltage errors occur.

Generator Control

The ATS controls the generator's operation and ensures that the generator is properly warmed up before supplying electricity and properly cooled after it is requested to turn off.

Standards

The ATS Series complies to the following IEC Standards: IEC 60204-1, IEC 61439-1,2, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, UL 1008



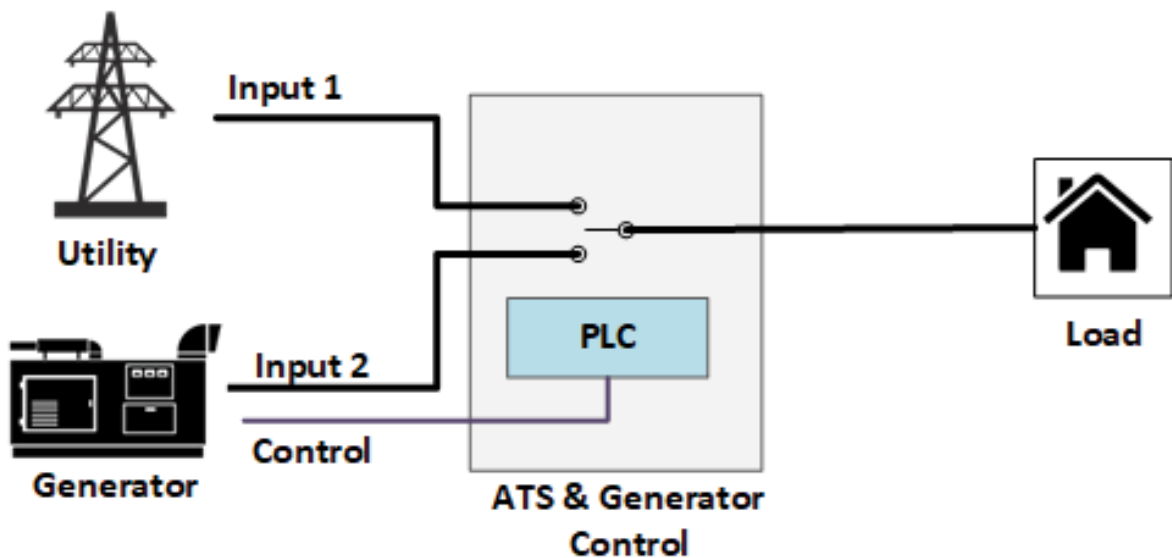
Operation

The Automatic Transfer Switch Panel (ATS) is used to provide the Energy Storage Control and Bypass Panel (ESCB) with a two-sources input. It switch the system's input between utility when available and backup generator when needed as per the below Single Line Diagram.

The ATS has three operation modes (AUTO, Manual, and OFF) that can be interchanged by the selector switch located at the front of the panel. In the "AUTO" mode, the ATS turns ON/OFF the generator as per the signal recieved from the ESCB and switches its output between utility and generator. In the "Manual" mode, the ATS turns ON the generator whenever utility is not available and switches its output between utility and generator. In both "AUTO" and "Manual" modes the ATS makes sure that the generator warms up and cools down according to manufacturer's specifications. In the "OFF" mode, the generator control functionality is disabled and the ATS only allows utility to supply its output.

If the ATS detects a phase reversal, phase loss, phase unbalance, low voltage, or high voltage on one of the two inputs it will automatically cuts off the corresponding input and send an alarm via RS485 Modbus RTU protocol to a optional BMS or to an optional exiting E24 Energy Storage System.

ATS & GENERATOR CONTROL TOPOLOGY



Technical Specifications

	ATS1-10KI	ATS3-20KI	ATS3-40KI	ATS3-60KI	ATS3-80KI	ATS3-100KI	ATS3-120KI	ATS3-160KI
AC Input:								
Acceptable AC Voltage (V):	220 +/- 20%	380/220 +/- 20%						
Maximum Current (A):	1x63	3x50	3x80	3x120	3x160	3x200	3x240	3x320
Frequency (Hz):	50/60 +/- 5%							
AC Output:								
AC output Voltage:	220 +/- 20%	380/220 +/- 20%						
Maximum Current (A):	1x63	3x50	3x80	3x120	3x160	3x200	3x240	3x320
Maximum Power (kW):	12.5	29.7	47.5	71.3	95.0	118.8	142.6	190.0
Frequency (Hz):	50/60 Hz +/- 5% (synchronized with Utility or Generator Input)							
Mechanical Characteristics:								
Weight (Kg)	20	27	29	35	42	48	55	62
Dimensions HxWxD (mm)	500x700x230	500x700x230			600x800x270		1000x1200x350	
Footprint WxD (mm)	500x230	500x230			600x270		1000x350	

	ATS3-200KI	ATS3-240KI	ATS3-280KI	ATS3-320KI	ATS3-400KI	ATS3-480KI	ATS3-560KI	ATS3-640KI
AC Input:								
Acceptable AC Voltage (V):	220 +/- 20%	380/220 +/- 20%						
Maximum Current (A):	3x400	3x475	3x550	3x630	3x790	3x945	3x1100	3x1260
Frequency (Hz):	50/60 +/- 5%							
AC Output:								
AC output Voltage (V):	220 +/- 1%	380/220 +/- 1%						
Maximum Current (A):	3x400	3x475	3x550	3x630	3x790	3x945	3x1100	3x1260
Maximum Power (kW):	237.6	282.2	326.7	374.2	469.3	561.3	653.4	748.4
Frequency (Hz):	50/60Hz +/- 1% (Adjustable and Synchronized to Input)							
Mechanical Characteristics:								
Weight (Kg)	83	100	106	118	132	164	173	189
Dimensions HxWxD (mm)	1600x1200x350	1800x1000x400			2000x1200x400			
Footprint WxD (mm)	1200x350	600x270			1200x400			

Ordering Information

Ref Number	Description
ATS1-10KI	Automatic Transfer Switch, 9 KW, 220V, 50/60Hz
ATS3-20KI	Automatic Transfer Switch, 18 KW, 220V, 50/60Hz
ATS3-40KI	Automatic Transfer Switch, 36 KW, 220V, 50/60Hz
ATS3-60KI	Automatic Transfer Switch, 54 KW, 220V, 50/60Hz
ATS3-80KI	Automatic Transfer Switch, 72 KW, 220V, 50/60Hz
ATS3-100KI	Automatic Transfer Switch, 90 KW, 220V, 50/60Hz
ATS3-120KI	Automatic Transfer Switch, 108 KW, 220V, 50/60Hz
ATS3-160KI	Automatic Transfer Switch, 144 KW, 220V, 50/60Hz
ATS3-200KI	Automatic Transfer Switch, 180 KW, 220V, 50/60Hz
ATS3-240KI	Automatic Transfer Switch, 216 KW, 220V, 50/60Hz
ATS3-280KI	Automatic Transfer Switch, 252 KW, 220V, 50/60Hz
ATS3-320KI	Automatic Transfer Switch, 288 KW, 220V, 50/60Hz
ATS3-400KI	Automatic Transfer Switch, 360 KW, 220V, 50/60Hz
ATS3-480KI	Automatic Transfer Switch, 432 KW, 220V, 50/60Hz
ATS3-560KI	Automatic Transfer Switch, 504 KW, 220V, 50/60Hz
ATS3-640KI	Automatic Transfer Switch, 576 KW, 220V, 50/60Hz



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