

Automatic Transfer Switch, 72x72 DIN Size



ATS-10

Automatic Transfer Switch
72 x 72 DIN Size

Description

The ATS-10 provides the mains voltage monitoring and automatic transfer switching. In the event of a mains voltage failure, the remote start relay output is energized and the unit automatically transfers the load from the mains to the generator. Microprocessor technology allows exact measurement, set point adjustment and timing functions with the parameters to be simply programmed and displayed from the front panel.

Operation

The ATS-10 automatic transfer switch can detect failure of any phase of the mains supply. If at least one of the mains phase voltages goes outside set limits, the unit operates as follows:

- The **Mains Voltage Okay** led turns from green to red. The mains contactor output is deenergized and the green **Mains Contactor Closed** led is extinguished.
- The remote start output is energised after the Remote Start Delay parameter has expired. The generator start module receives this signal and initiates the engine start.
- If the Unit Usage Type parameter (P00) is selected as 0 (Type-1); When the generator voltage is within set limits, the yellow **Generator Running** led will illuminate. The unit will allow the generating set to run without load until the Engine Heating Period parameter is expired. After this time, the yellow **Generator Contactor Closed** led will start blinking and the unit wait for the Generator Contactor Delay parameter.
If the Unit Usage Type parameter (P00) is selected as 1 (Type-2); When the Engine running signal is present, the yellow **Generator Running** led will illuminate. The unit will allow the generating set to run without load until the Load gen. signal is present. If this signal is present, the yellow **Generator Contactor Closed** led will start blinking and the unit wait for the Generator Contactor Delay parameter.
- The generator contactor output will be energized and the yellow **Generator Contactor Closed** led will illuminate steadily when the Generator Contactor Delay parameter is expired.
- If the mains voltage return to within limits, the **Mains Voltage Okay** led will turn to green and the unit waits for the Mains Return delay parameter for the mains voltage stabilization.
- When the Mains Return Delay parameter is expired, the yellow **Generator Contactor Closed** led is extinguished and the generator contactor output is deenergized. Then the green **Mains Contactor Closed** led will start blinking and then the unit will wait for the Mains contactor Delay parameter.
- When the Mains contactor Delay parameter is expired, the green **Mains Contactor Closed** led will illuminate steadily and the mains contactor output is energized. Then the remote start output is deenergized.
- The unit is ready for a new mains failure.

The ATS-10 has got a TEST mode feature. This mode allows the generating set to be tested without taking the load. This mode is also called Emergency backup mode which keeps the generating set running and makes a quick transfer if a mains failure occurs.

In this mode, The remote start output will be energized but no load transfer will take place unless the occurrence of a mains failure. If a mains failure occurs, the load will be transferred to the generating set. If the mains voltage return to within limits and the Mains Return Delay parameter is expired, the load will be transferred to the mains, but the generating set will be kept running. The remote start output will only deenergized when the Test mode is cancelled.

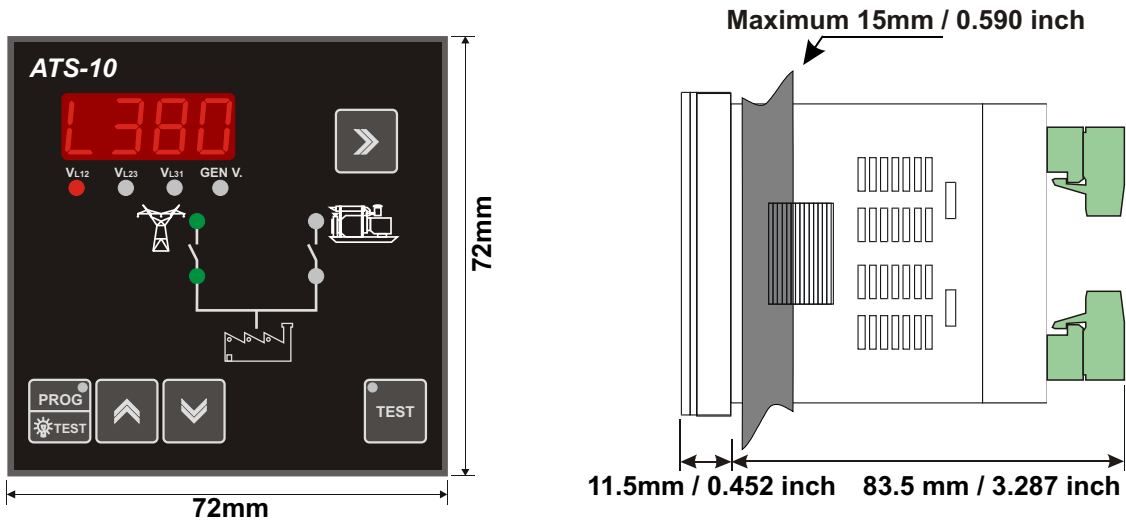
Automatic Transfer Switch, 72x72 DIN Size

Specifications

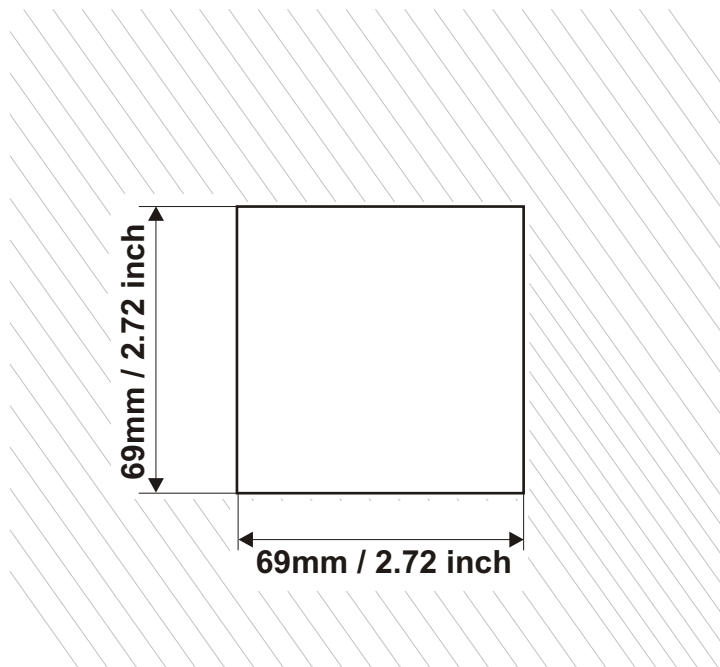
Equipment Use	Electrical control equipment for generating sets
Housing & Mounting	72mmx72mmx95mm (including connectors) DIN43700 plastic housing for panel mounting
Panel Cut-out	69mmx69mm
Protection	NEMA4X (IP65 at front panel, IP20 at rear side)
Weight	Approximately 0.27 kg
Environmental Rating	Standard, indoor at an altitude of less than 2000 meters with non-condensing humidity
Operating / Storage Temperature	-25°C to +70°C / -40°C to +85°C
Operating / Storage Humidity	90% max. (Non-condensing)
Installation Over Voltage Cat.	II appliances, portable equipment
Pollution Degree	II, Normal office or workplace, non-conductive pollution
Mode of Operation	Continuous
EMC	EN-61000-6-4, EMC generic emission standard for industrial equipment EN-61000-6-2, EMC generic immunity standard for industrial equipment
Electrical Safety	EN-61010-1, safety requirements for electrical equipment for measurement, control and laboratory use
Battery Supply Voltage(=)	8-32 V= max. Operating current is 240 mA
Generator Voltage Measurement	35-300VL-N~RMS (@15.6-99.9 Hz). Accuracy: 1% FS. Resolution : 1V
Mains Voltage Measurement	35-300VL-N~RMS (@15.6-99.9 Hz). Accuracy: 1% FS. Resolution : 1V
Cranking Dropouts	Battery voltage can be 0V= for max. 100msn during cranking (battery voltage should be at least nominal voltage before cranking)
Contact Sensing Inputs	Load Generator Signal (NO) Engine Running Signal (NO)
Relay Outputs	Remote Start Relay (1NO+1NC. 12A@32V =) Mains Contactor Relay (1NC. 5A@250V ~) Generator Contactor Relay (1NO. 5A@250V ~)
Display	4 Digits, 7 segments LED display showing : Mains Voltage (Phase-Phase and Phase-Neutral) Alternator Voltage. (If the Unit Usage Type parameter (P00) is selected as 0 (Type-1)) Program Parameters
Status Indicators	TEST Mode LED PROG Mode LED Mains Voltage Okay LED Generator Running LED Mains Contactor Closed LED Generator Contactor Closed LED

Automatic Transfer Switch, 72x72 DIN Size

Dimensions

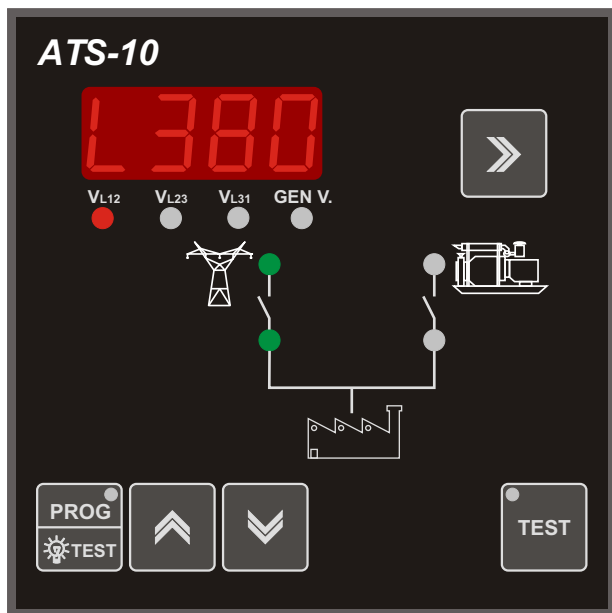


Panel Cut-Out

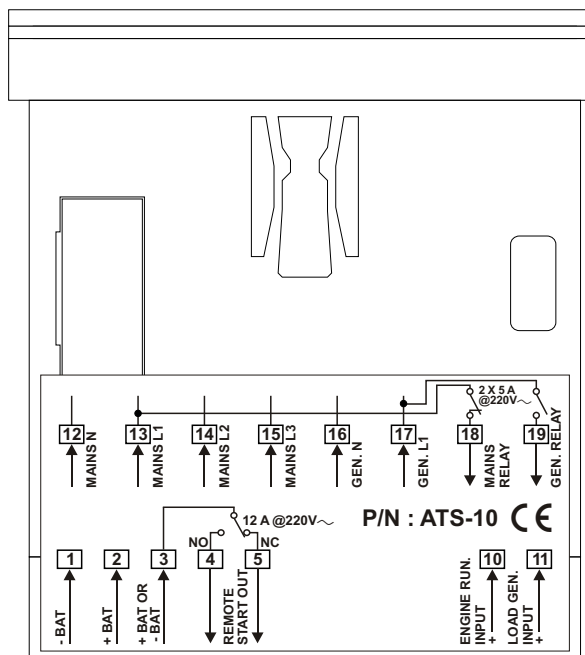


Automatic Transfer Switch, 72x72 DIN Size

Front View



Terminal Connections



ATS-10 Parameters List

Type - 1 (P00 = 0): When “Generator Voltage” detected by ATS-10 Parameters List

No	Definition of Parameter	Min	Max	Default	Unit
P00	Unit Usage Type	0	1	0	
P01	Mains Voltage Connection Level	60	600	320	V~
P02	Mains Voltage Disconnection Level	60	600	300	V~
P03	Mains Voltage Upper Limit	60	600	440	V~
P04	Mains Return Delay	0	9999	30	sec
P05	Generator Contactor Delay	0.1	25.0	1.0	sec
P06	Mains Contactor Delay	0.1	25.0	1.0	sec
P07	Remote Start Delay	0	9999	0	sec
P08	Engine Heating Period	0	250	10	sec
P09	Alternator Voltage Lower Limit	60	600	320	V~
P10	Alternator Voltage Upper Limit	60	600	440	V~
P11	Password	0	9999	0	

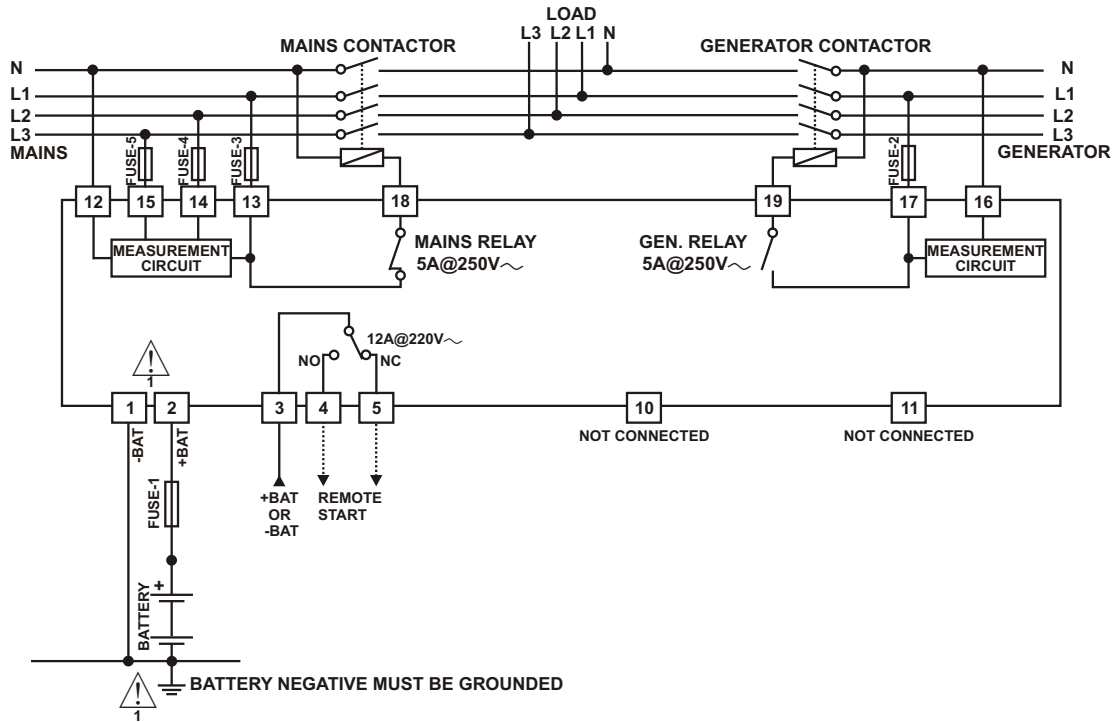
Type - 2 (P00 = 1): When “Load Generator Logic Input” detected by ATS-10 Parameters List

No	Definition of Parameter	Min	Max	Default	Unit
P00	Unit Usage Type	0	1	1	
P01	Mains Voltage Connection Level	60	600	320	V~
P02	Mains Voltage Disconnection Level	60	600	300	V~
P03	Mains Voltage Upper Limit	60	600	440	V~
P04	Mains Return Delay	0	9999	30	sec
P05	Generator Contactor Delay	0.1	25.0	1.0	sec
P06	Mains Contactor Delay	0.1	25.0	1.0	sec
P07	Remote Start Delay	0	9999	0	sec
P11	Password	0	9999	0	

Automatic Transfer Switch, 72x72 DIN Size

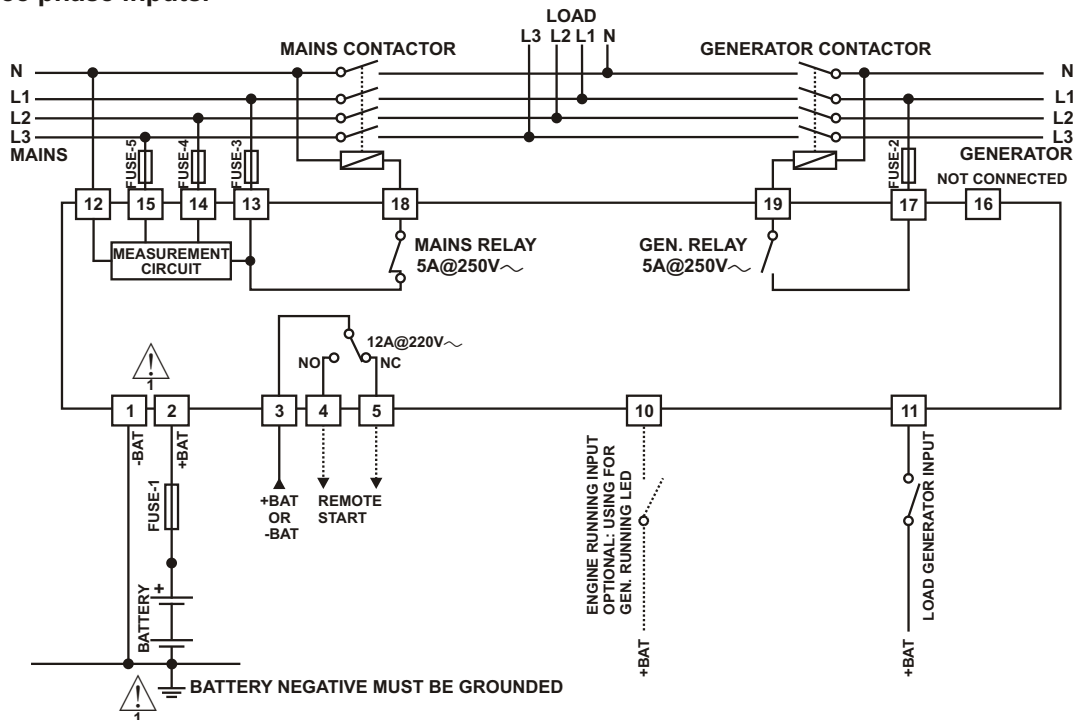
Three Phase Connection Schematic For Type - 1 (P00 = 0)

NOTE: If single phase sensing is required the single phase can be fed into all three phase inputs.



Three Phase Connection Schematic For Type - 2 (P00 = 1)

NOTE: If single phase sensing is required the single phase can be fed into all three phase inputs.



The fuses should be as follows:

- FUSE-1 1A. T
- FUSE-2, FUSE-3 1A. T
- FUSE-4, FUSE-5 1A. T

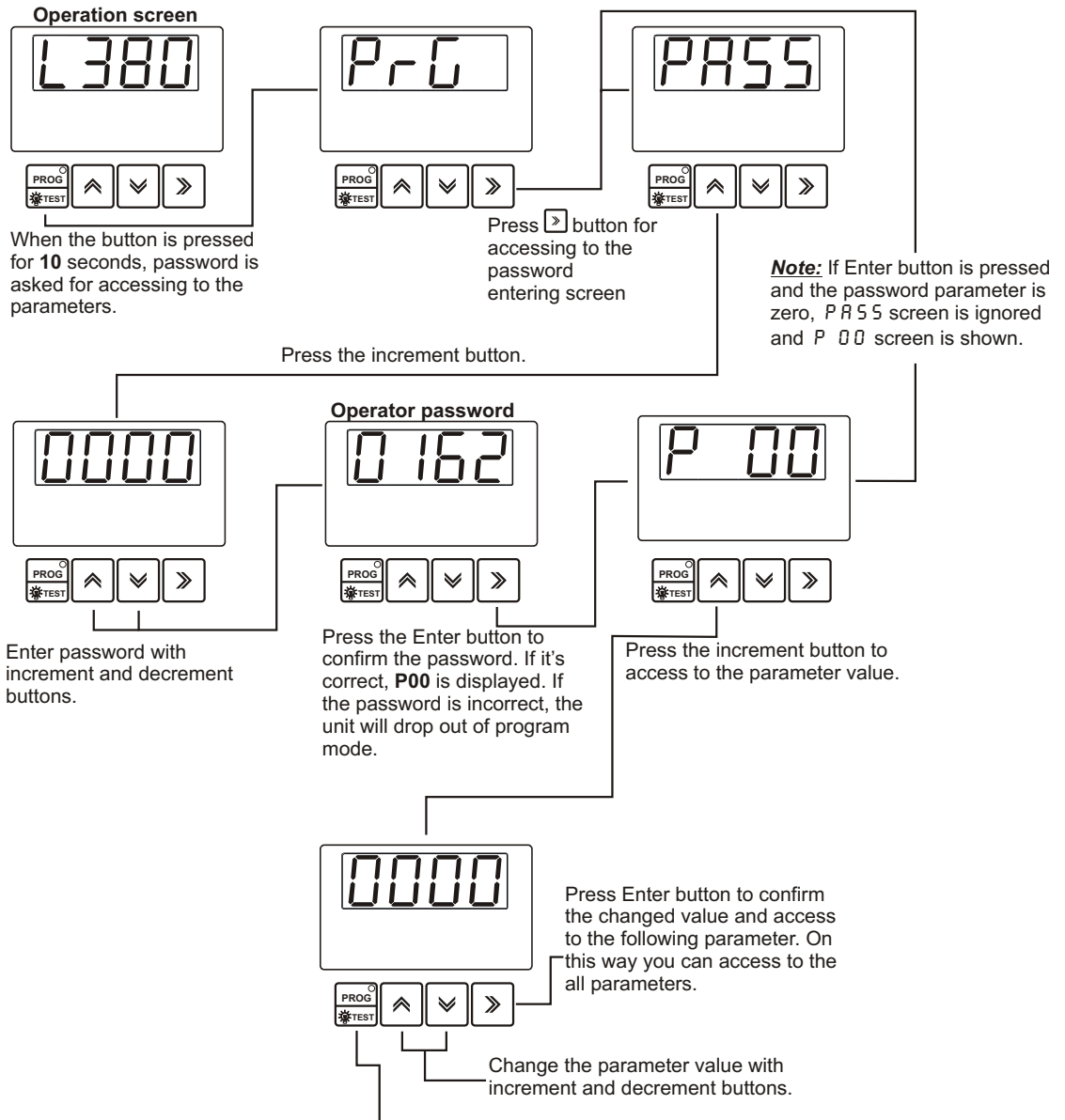


1- Connect the unit as shown in the appropriate diagram above. Be sure to connect the battery supply the right way round and battery negative should be grounded. The connectors can be unplugged from the rear of the unit to facilitate connection.

Automatic Transfer Switch, 72x72 DIN Size

Easy Access Diagram to Programming Parameters

i The Programming mode must be entered only while the mains voltage okay and the load supplied from mains. It is your responsibility if this equipment is used in a manner not specified in this instruction manual.



Note: If the PROG button is pressed or if no buttons are pressed for a period of **2** minutes, the unit will return to the normal operation screen.

Product Code

ATS-10	Automatic Transfer Switch, 72mmx72mmx95mm Size
---------------	--