

How to connect an ATS / AMF to a generator the right way

Connecting an ATS or AMF to the mains, Generator & Load.

- Connect the incoming mains N, L1, L2 & L3 cables (in the correct sequence) to the **bottom** of the **MC** contactor.
- Connect the incoming generator N, L1, L2 & L3 cables (in the correct sequence) to the **bottom** of the **GC** contactor.
- On the **top** of either the **MC or GC** (which are linked together with “linking cables”) connect the outgoing N, L1, L2 & L3 **LOAD** cables in the correct sequence.

Once the above connections have been undertaken a security check that all connections are tight,

You must then connect the following:

- The **AUTO START** cables (cable numbers 102 “NO contact signal” or 100 “NC contactor signal” and 101 “common connection”) to the generator.
- If the generator requires (battery charging facilities) connect the **AUX connections “230v”** cable connection.
- If the generator requires (jacket water heater facilities) connect the **AUX connections “230v”** cable connections.

Once all of the above connections have been made and secured, the ATS / AMF is ready for mains switch on,

Mains on, check out the following:

THE PHASE FAILURE RELAY

- Check out “visually” Phase Failure Relay (BXP4001 three phase unit) if the mains MC cables are connected correctly (as above) then the GREEN (healthy light “bottom left hand side of the relay” is on, and the opposite RED light is on) when both light eliminated mains connections are correct.
- If the GREEN light is on but the RED light is not on the check that the N, L1, L2. & L3 incoming mains cables are in the correct sequence and rectify.

THE T1 TIMER RELAY

- T1 Timer is **ON LOAD** timer delay, this relay is normally set at 6 seconds, this can be increased or decreased by making adjustments to the dials at the front of the unit.
- The Timer operation, under normal operation of the ATS / AMF with the mains MC contactor receiving mains power suddenly under goes a power failure (either one phase or all three phases) the mains failure relay senses the power loss and the panel loses all power. The generator is monitoring the panel via the AUTO start relay signal, once the generator receives the normally open signal, the generator starts. The power from the generator is directed to the GC Contactor and powers the panel which in turn start the T1 timer, once the timer has run for 6 seconds the contactors change allowing the generator power to pass through the contactor set and onto the building **LOAD**.

RENTAL CENTRES

Scotland & North ide Rental Ltd, Unit 8 Shawfield Trade Park, Rutherglen, Glasgow. G73 1DB Tel: 0141 647 0850

The Midlands ide Rental Ltd, Unit 4A & D, Zone 2, Burntwood Business Park, Ring Road, Burntwood, Staffs. WS7 3JQ Tel: 01543 674 759

The South ide Rental Ltd, Unit 13 Thurrock Trade Park, Oliver Road, Grays, Essex. RM20 3AL Tel: 01708 863 963



THE T2 TIMER RELAY

- T2 Timer is **OFF LOAD** timer delay, this relay is normally set at 30 seconds, this can be increased or decreased by making adjustments to the dials at the front of the unit.
- The Timer operation, under normal operation of the ATS / AMF with the mains MC contactor receiving mains power suddenly under goes a power re-instatement (all three phases only) the mains phase failure relay senses the power has now been re-instated. The phase failure relay has been set at 360v so the mains must stabilise at above 360v then T2 timer starts to time out allowing 30 seconds of stability before it switches the contactors back over to mains, once the timer has run for 30 seconds the contactors change allowing the generator power to pass through the contactor set and onto the building **LOAD**.
- The generator is monitoring the panel via the **AUTO** start relay signal, once the generator stops receiving the Normally Open signal, the generator will select its cool down cycle (normally 3 minutes) and continue to run but not supplying the building load.

KEY CONTROL SWITCH (on front of the panel)

There are two types of key selection switches used (ATS uses the two position) (AMF uses the three position).

TWO POSITION KEY SWITCH.

- Position Auto: select this and the panel is set in auto mode, waiting for mains failure.
- Position Test: select this and the switch simulates a phase failure to the phase failure relay signalling the generator to start. The generator will run up and once voltage is seen at the GC the contacts changeover and the generator will take the building load. (The mains remains live at all times on the MC side) Once **AUTO** is then selected on the key switch the generator will go into cool down mode and the contactors will change back to mains supply.



THREE POSITION KEY SWITCH.

- Position Auto: same as above*
- Position Test: same as above*
- Position Run: select this and the generator will get an **AUTO** start run signal and once the generator has run up to speed the contactors will not changeover the panel remains on **MAIN POWER** supply.



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FAULT FINDER

When the above process is complete there is still a chance you can encounter problems, below are some frequently asked questions regarding faults:

- **(Q)** I have connected up the mains, generator incoming cables and the load outgoing cables but the panel will not operate.
- **(A)** Check the lamps on the phase failure relay, RED illuminated (Healthy) and GREEN illuminated (Supply) both lamps must be illuminated, if Supply not illuminated the check the cable connections to the mains contactor are connected properly.
- **(Q)** The mains power is still on the MC, but the standby generator has had the signal to run.
- **(A)** The voltage has dropped below the setting on the phase failure relay setting, (pre set at 360v) this setting can be adjusted lower to overcome the problem, or there is a timer at the bottom of the relay that can be adjusted from 0.5s to 10s. This introduces a time delay that the voltage has to drop below (for the length of time set) before activating the phase failure relay.



If you encounter any other problems, speak to our technical support team on **01543 574111**.

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