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Automatic Changeover Unit (ACU) Main Supply – Stand-By Supply For Motor Operated Circuit Breakers Models AM527-1-2 & AM528



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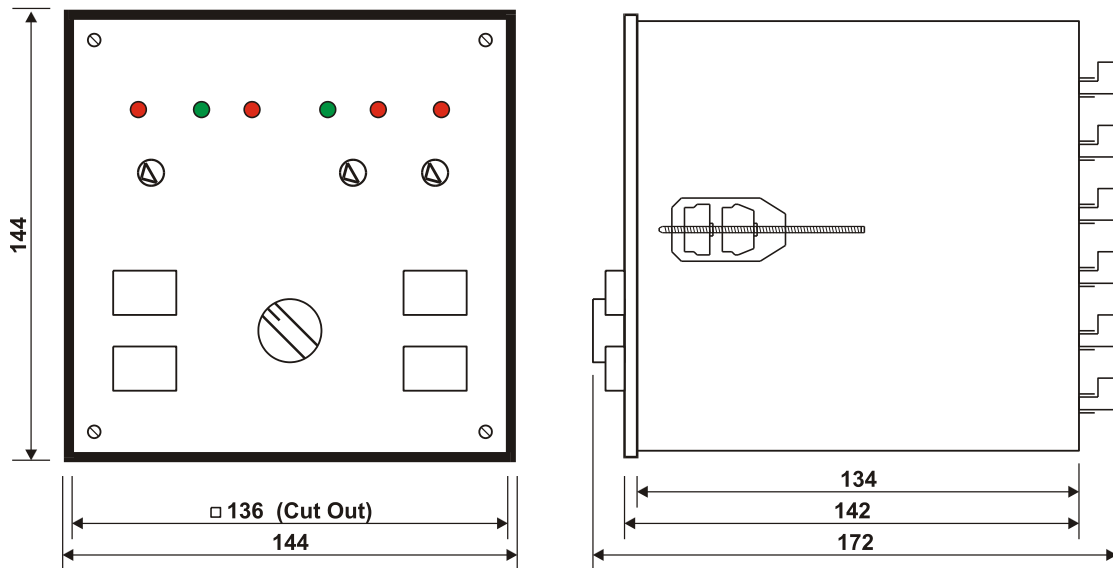
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GENERAL DESCRIPTION

The Automatic Changeover Units (ACU) AM527-1-2 & replaces the regular electromechanical command system which incorporates NO-VOLT relays, power relays, command relays, timers, selector switches and complete interconnection wiring. The ACU monitors the incoming 3-phases 400V (4 wire) from the Mains as well as from the Stand-By Supplies and activates external motor operated Circuit Breakers (C.B.s) for “Load Switching” from Mains to Stand-By Supply in case of Mains Supply voltage failure and vice versa, in case of Main Supply voltage restoration. An electrical interlock prevents any possibility of simultaneous activation of the two C.B.s (Main and Stand-By Supplies).

The ACU is assembled in a 144x144x170 mm plastic case meeting DIN 43700 and is designed for installation on the front panel of the electrical distribution board. On request, a lockable transparent door is optionally available.

EXTERNAL DIMENSIONS (mm)



In order to simplify installation, maintenance and eventual replacement, all the ACU connections to the Mains – Stand-By Supplies are provided with plug-ins on the rear side of the ACU.

The ACU offers a variety of Command and Control solutions for Motor Operated Circuit Breakers (C.B.s).

The ACU design and development are based on extensive field experience as well as specific requirements regarding the Mains and Stand-By Supplies switching process.

AMDAR's reputation for quality electronic switching relays originates from its advanced development procedures and utilization of State Of The Art technologies.

AMDAR's automatic changeover units are manufactured, calibrated and tested under the strictest Quality Control procedures, in order to guarantee the highest safety and reliability standards.

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GENERAL FEATURES

1. Monitoring voltage drop in any of the 3 phases (15% below nominal value), missing phases and phase sequence for both the Mains and Stand-By Supplies.
2. Selector switch AUT – OFF – MAN, setting Automatic, OFF or Manual modes of operation.
3. ON/OFF switching pushbuttons for both the Mains and Stand-By Supplies Circuit Breakers.
4. Mains and Stand-By Supplies ON status indication LEDs (Green).
5. Mains and Stand-By Supplies overload indication LEDs (Red).
6. Mains and Stand-By Supplies voltage status indication LEDs (Double colored LEDs):
 - In limits voltage, Green light.
 - Undervoltage or missing phase, Red light.
 - Inverted phase sequence, flashing Red light.
7. Three potentiometers on the front panel:
 - Mains Supply ON DELAY 0.5 – 10 sec.
 - Stand-By Supply ON DELAY 0.5 – 10 sec.
 - Stand-By Supply OFF DELAY 5.0 – 180 sec.
8. Connection plugs on the rear side of the ACU, as follows:
 - 3-phase (4-wire) Mains Supply plug connector (J1).
 - 3-phase (4-wire) Stand-by Supply plug connector (J4).
 - Input plug connector (J2), for Mains Supply C/B. auxiliary contacts.
 - Input plug connector (J5), for Stand-by Supply C.B. auxiliary contacts and for the external dry contact (NO), approving the activation of the Stand-By C.B.
 - Output plug connector (J3), for Mains Supply C.B. operation command.
 - Output plug connector (J6), for Stand-By C.B. operation command.
 - Output plug connector (J7), for the External Control System (indicating the SELECTOR SWITCH position : AUT, OFF or MAN).

NOTE

If for any reason the ACU is inoperative, both C.B.s (Mains and Stand-by Supplies) can be manually operated.

PRINCIPLE OF OPERATION

In order to detect any voltage failure, the ACU monitors 3 major parameters of the controlled Mains and Stand-By Supplies 3-phase voltages:

- Missing phases.
- Phase sequence.
- Undervoltage (any voltage drop 15% below the nominal value, or 10-25% on request).

The ACU allows 3 modes of operation:

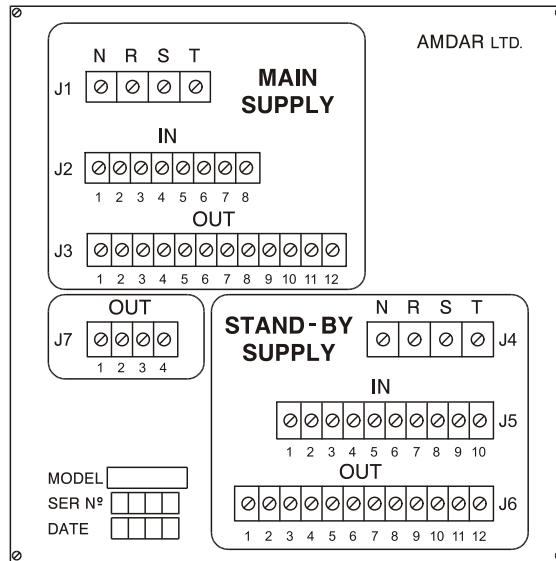
- I. **Automatic Mode** (selector switch is set to “AUT” position).
Under this mode of operation and in case of Mains Supply voltage failure, the ACU issues a proper command (J6: pins 11, 12) for the Stand-By Supply.
After receiving from the Stand-By Supply an acknowledge signal (J5: pins 9, 10) and provided that it is properly connected and its voltage is in normal condition, the ACU initiates the following sequence:
 - Switches OFF the Mains Supply C.B.
 - After an adjustable time delay of 0.5 to 10 sec., switches ON the Stand-By Supply C.B.
If Mains Supply Voltage restores its correct values, the ACU issues a command (J3: pins 11, 12) to deactivate the Stand-by Supply and after an adjustable time delay of 5 to 180 sec., it initiates the following sequence of activities:
 - Switches OFF the Stand-By Supply C.B.
 - After an adjustable time delay of 0.5 to 10 sec. switches ON the Mains Supply C.B.
- II. **Manual Mode** (selector switch is set to “MAN” position).
Under this mode of operation, the ACU permits to control the Mains and Stand-By Supplies C.Bs by two sets of ON-OFF pushbuttons, located on the front panel.
An electrical interlock prevents any possibility of simultaneous operation of the two C.Bs (Mains and Stand-By Supplies).
- III. **OFF Mode** (selector switch is set to “OFF” position).
Under this setting, the ACU control over the Mains and Stand-By Supplies C.B.s is completely disabled.

NOTE

In order to connect the ACU to various vendors Circuit Breakers, please contact AMDAR Ltd. for proper instructions.

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REAR PANEL



TECHNICAL DATA

Supply Voltage	230VAC (-15% / +10%)
Frequency Range	45-65Hz
Self Consumption	20VA
Relays – Out put Ratings: - Plugs J3 & J6 outputs 1,2,10 - Plugs J3 & J6 output 5 - Plugs J3 & J6 outputs 11,12	8A @ 230 VAC 1A @ 230 VAC Floated Contacts 3A @ 230 VAC
Plug J7 outputs 1-2, 1-3, 1-4	150mA @ 24 VDC
Ambient Temperature , during operation	0°C - 40°C
Storage Temperature Range	0°C - 60°C
Connection Type	Quick Connection
Weight approx.	1.5 Kg.
Protection Class acc. to EN 60529	IP30

WARRANTY

AMNDAR warrants the products it manufactures against defects in material and workmanship for a period of one year from the date of the shipment, provided that the product was stored, handled, installed, operated and maintained under proper conditions.

AMNDAR's liabilities extend only to the repair or replace the product at AMNDAR's option at AMNDAR's premises. This warranty obligation does not cover any transformation charges to and from AMNDAR's premises.

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