

Deep Sea Electronics Plc

300 series CONTROL MODULES

MODEL 307 REVERSE POWER UNIT

DESCRIPTION

The series 300 Reverse Power Unit is a compact modular control unit designed to complement the other units in the 300 Series of generator control and system monitoring equipment. The function of the Reverse Power Unit is to protect the generating set from power fed back from a parallel mains supply or another generator - this could cause the generator to motor, and therefore dramatically affect the loading on the mechanical drive to the generator.

The Reverse Power Unit is designed to operate on either a single phase or a three phase, four wire installation. It incorporates additional features which enable on-site setting and testing of both the trip point and the time delay before trip. The unit operates by comparing the sign of the phase angle between generator and load current and generator line voltage. If the Reverse Power Unit senses that current is being fed back to the generator output, the red "Delay" LED is lit, and a timer started. If, at the expiry of the set delay time, mains power is still present, the generator out-put is taken off-load, the red LED is extinguished, and the yellow "set %" comes on as indication that the unit is tripped.

The test function causes a reversal of the current input sensed by the Reverse Power Unit, thereby invoking a simulated fault condition and enabling the function and the delay time of the unit to be checked.



MANUFACTURED TO: BS 5149 & BS 5458
IEC 414 & IEC 144 LR/UK

VOLTAGE: 100 to 130v nominal or
200 to 277v nominal. Single
phase or 3 phase 4 wire

FREQUENCY: 50Hz or 60 Hz

OVERLOAD: (continuous) 1.2 times rated value
(10 second) 1.5 times rated value

RATING: Voltage 3VA max
Current 5A 2VA max

REVERSE POWER TRIP ADJUSTMENT: 2.5 to 17.5%
of rated Current

TRIP DELAY ADJUSTMENT: 2.5 to 17.5 secs

REPEATABILITY OF TRIP: 0.5%

HYSTERESIS: less than 1%

OPERATIONAL LIFE: Minimum 2×10^5 operations

TRIP OUTPUT: Changeover relay, 2 pole contact
rating 6A, 220v, resistive

TEST: Test of trip function and delay by
push-button

RESET: Automatic or manual by external
push-button

DIMENSIONS: 100 X 112 X 70mm
(W x D x H)

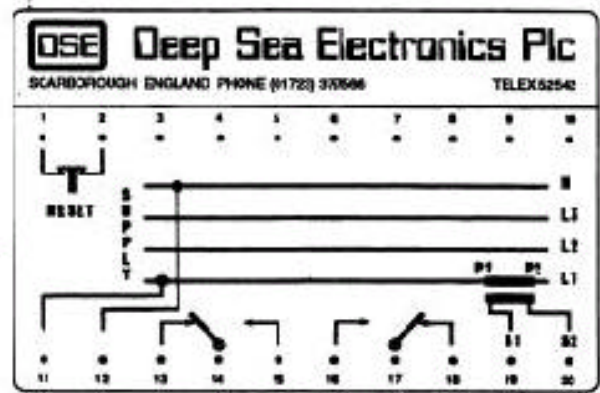
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INSTALLATION

The series 300 Reverse Power unit is designed for control panel mounting. A voltage tap from the Generator output is connected at terminal 11 and 12 of the unit and the current transformer if the unit is wired into the same phase as the voltage tap, with its secondary connected to terminals 19 and 20. Note that in installation of the current transformer it is important that the normal direction of current flow is from P1 to P2. If a manual reset push-button is required, a normally-closed push-button should be wired between terminals 1 & 2. If these terminals are left open, the Reverse Power Unit will permit automatic reset as the reverse line current falls below the preset value. The current transformer must be designed to give 5 amps on the secondary winding for 100% load in order to provide current scaling of the SET % adjuster. Two sets of changeover contacts are provided for use by slave controllers. As trip occurs, the relay contacts between terminals 13,14,15, and 16,17 and 18 are changed as indicated in the Connection Diagram.

SET UP AND CALIBRATION

CONNECTION DIAGRAM



ORDERING DETAILS

When ordering the Reverse Power Unit, please specify :-

- System Voltage
- System Frequency
- Any other special features desired

Design of the unit is flexible and can be adapted, within wide limits, to specific customer requirements.

MECHANICAL DIMENSIONS

