

## Automatic Changeover Switch

## ACOS



The Automatic changeover switch (ACOS) provide the capability to automatically switch a load between a 'Normal' and an 'Alternative' supply. Switching employs mechanically interlocked contactors and is controlled by electronic monitoring of the supply. Override facilities are provided which allow for manual selection of either power source.

The ACOS are built into fabricated steel enclosures suitable for bulkhead mounting.

Access for maintenance and repair is from the front of the unit via a hinged door which opens to the left. The door is furnished with six indicating LEDs, and a four position selector switch.

All switching operations include a dwell time when both contactors are open so that the incoming supplies cannot be paralleled under any operating condition. The dwell time can be pre-set between 100ms and 20s.

When in Auto mode, the ACOS will be biased to the Normal supply and will transfer to the Alternate supply if the Normal supply is out of limits. Once the Normal supply returns to

within limits, the ACOS will transfer back to the Normal Supply.

In manual override the contactor coils are disconnected from the control PCB and the selected coil is connected direct to the incoming supply by the mode selector switch.

## ELECTRICAL CHARACTERISTICS

### Input

|          |                               |
|----------|-------------------------------|
| ACOS32A  | 440 volts 3 phase 3 wire 60Hz |
| ACOS115A | 440 volts 3 phase 3 wire 60Hz |
| ACOS150A | 440 volts 3 phase 3 wire 60Hz |
| ACOS32B  | 115 volts 1phase 2wire 400Hz  |

### Output

|          |                               |      |
|----------|-------------------------------|------|
| ACOS32A  | 440 volts 3 phase 3 wire 60Hz | 32A  |
| ACOS115A | 440 volts 3 phase 3 wire 60Hz | 115A |
| ACOS150A | 440 volts 3 phase 3 wire 60Hz | 150A |
| ACOS32B  | 115 volts 1phase 2wire 400Hz  | 32A  |

### Control

OFF/NORM/AUTO/ALT Control switch

### Indications

Normal Available LED  
Normal Healthy LED  
Normal Connected LED  
Alternate Available LED  
Alternate Healthy LED  
Alternate Connected LED

### Remote indications

Volt free changeover contacts.  
Suitable for low-level "dry-circuit" logic switching.  
Maximum rating: 1A at 115V ac or 28V dc.

Normal Healthy  
Normal Connected  
Alternate Healthy  
Alternate Connected

These are Normally Open (N/O) and close when the supply is Healthy or Connected to the output.

## MECHANICAL FEATURES

### Enclosure

Fabricated mild steel folded and welded for strength. Bulkhead mounted.

### ACOS32A & ACOS32B

Dimensions (O/A)(hxwx d) mm 410 x 300 x 250  
Fixings (mm) 4 holes 11.0mm dia. Centres(wxd) 390 x 260  
Weight 17kg

### ACOS115A & ACOS150A

Dimensions (O/A)(hxwx d) mm 510 x 400 x 290  
Fixings (mm) 4 holes 11.0mm dia Centres(wxd) 490 x 360  
Weight 29kg

A clearance of at least 100 mm should be allowed around the unit to allow proper ventilation.

### Cable Entry

Bottom via gland plate

### Ingress Protection Rating

IP44

### Cooling

Naturally cooled.

### Maintenance

Front maintenance - Hinged door for access.

### Internal wiring

Low fire hazard cross linked polyolefin RADOX 125.

### Earthing

M10 external earth studs are provided.

## ENVIRONMENTAL CHARACTERISTICS

### Shock

Designed for a shock level of 15g. For shock levels above this shock mounts should be used.

### Vibration.

Designed to meet the vibration requirements of DGS 350. (5 to 33Hz +/- 0.125mm)

### Noise

< 65dbA.

### Electromagnetic Compatibility.

Designed to meet the requirements of Def Stan 59-41

### Ambient Temperature.

0°C to + 45°C.

### Relative Humidity

10% to 95% non-condensing.

### Ships Motion

The equipment is designed to withstand, without damage or degradation of performance or spillage of fluids, ship motion due to the action of the sea and weather as well as accelerations and velocities deriving from deliberate ship manoeuvres. Typically

|                    |       |
|--------------------|-------|
| Roll angles        | ± 30° |
| Pitch angles       | ± 10° |
| Steady list angles | ± 15° |
| Steady trim angles | ± 5°  |

