SUGGESTED TECHNICAL SPECIFICATION

Automatic Transfer Switching Equipment

**Purpose of this specification**

This specification describes ATSE (Automatic Transfer Switching Equipment) having 3 stable positions (I - O - II) and designed to switch on-load with a fast and reliable transfer from one supply source to the other.

1. **Standards and certificates**

The ATSE must comply fully with the following standards whilst compliance with the said standards must be shown on the product sticker:

* IEC 60947-6-1 Class PC
* IEC 60947-3

The ATSE is to be designed and built as a fully integrated product (power switching, motorisation and ATS Control), shall be of the same recognized manufacturer and shall be tested to IEC 60947-6-1 as one complete unit.

Its research and development as well as the manufacturing facility must be certified to ISO 14001 for environmental management systems and to ISO 9001 for quality management.

The ATSE shall be declared conform to the IEC standards by a testing laboratory having the CBTL qualification (Certification Body Testing Laboratory) delivered by a National Certification Body under the IECEE certification body scheme.

1. **General Characteristics**

The ATSE shall be composed of:

* An open transition break before make architecture (I – 0 – II), in full compliance with IEC 60947-6-1 Class PC.
* Two back to back, fully rated, IEC 60947-3 compliant, load break switch disconnects.
* An inherent fully integrated robust mechanical interlock between both switches.
* An independent switching mechanism free from external factors during transfer.
* Mounting lugs fit onto the switches (power section) independent of the motorisation.
* A wide band (control voltage of 50/60Hz, 166-332Vac) motorisation module fit directly to the switching mechanism.
* An integrated ATS controller with dual power supply (DPS) and 3 phase sensing on both source supplies and front microswitches & potentiometers to adjust voltages, frequencies, theresholds and timer values for fast commisioning
* An easy to remove motorisation & control module. (With no disturbance to the load) Dual emergency manual on load operation.
* Padlocking in the zero position with the use of up to 3x 8mm padlocks.
* Clear switch position indication (I – 0 – II), on the motorisation module.
* A distinct manual / automatic mode selectable by turning a rotary switch or a removable key switch located on the motorisation module.
* A neutral pole fully rated and left or right configuration.

The ATSE shall have high short time current withstand capability (Icw 30ms and 60ms) in accordance to IEC 60947-6-1 standard.

The ATSE shall be able to perform a safe isolation in 0 position according to IEC 60947-1 and IEC 60947-3 standards

The ATSE shall be fully integrated in one device:

Besides customer I/O, no additional wiring between functional units other than the power connections and voltage sensing shall be necessary to allow the proper functioning of the ATSE.

The ATSE should include dual “Product Available Outputs” (one on the motorisation and one on the ATS controls). The ATSE should analyse / test its condition periodically and communicate through dry contacts to report the ability of the transfer switching equipment to operate. (watchdog function)

1. **Functions and performance**

The ATSE shall have no power consumption while in a stable position other than that required for the ATS control unit.

All poles including neutral must switch simultaneously with a time gap of less than 1ms and moving contacts must be fixed to the same solid sliding bar.

The ATSE should include for On-Load as well as Off Loads tests associated with Mains – Gen applications. (The test will as a minimum start the Genset for a determined period of time). These tests should be operable manually through remote inputs or through MODBUS communication or through the ATSE monitoring software.

Once installed, power section of the ATSE shall be “Maintenance Free” however it would be recommended to switch through at least one complete cycle once a year.

1. **Manufacturer**

Acceptable manufacturer in line with this specification is SOCOMEC “ATyS g” or equal and approved.