YGLZ MANUAL
CHANGEOVER SWITCH

USER MANUAL



Models covered: 160A, 250A, 400A and 630A - 3 Pole and 4 Pole

IMPORTANT Installation, commissioning and servicing must be performed by a qualified electrician with all sources isolated and verified dead.

1. Purpose and product overview

The YGLZ series is a manually operated transfer load-isolation switch intended to select between two low-voltage power sources and provide circuit isolation. Typical applications include mains/generator changeover, two-feeder selection and maintenance isolation in distribution boards.

This guide covers IEP-branded YGLZ manual changeover switches in the following configurations:

M160AMP/3P	160 A	3
M160AMP/4P	160 A	4
M250AMP/3P	250 A	3
M250AMP/4P	250 A	4
M400AMP/3P	400 A	3
M400AMP/4P	400 A	4
M630AMP/3P	630 A	3
M630AMP/4P	630 A	4

The product is intended for infrequent manual switching at AC 50 Hz, generally up to 400 V. Some YGL family configurations may be rated differently; always treat the rating shown on the installed unit nameplate as authoritative.

2. Safety information

• Isolate both incoming supplies before installation, inspection, cable work or maintenance.

• Lock out and tag out both sources, then prove dead with an approved voltage tester.

• Never assume the OFF position makes all terminals safe; either source may remain live.

• Use conductors, lugs, protective devices and an enclosure suitable for the prospective fault current, load, ambient temperature and applicable regulations.

• Do not exceed the voltage, current, utilization category or short-circuit limits stated on the nameplate or project documentation.

• Do not operate a damaged, loose, contaminated, overheated or modified switch.

• Four-pole models may switch the neutral. Earthing/protective conductors must never be switched. Neutral switching must match the earthing arrangement and local rules.

3. Receiving, storage and inspection

On receipt, confirm that the model, current rating and pole count agree with the order and system design. Inspect the housing, operating handle, spindle, mounting frame and terminal pads for transport damage.

Pre-installation checklist

Nameplate	Correct current rating, poles and operating voltage
Mechanism	Handle moves positively through Source I - OFF - Source II with no binding
Terminals	Correct quantity; flat, clean and free of cracks or distortion
Insulation	No cracks, carbon tracking, moisture or contamination
Hardware	Frame, shaft, fasteners and supports present and secure
Accessories	External handle, shaft or auxiliary contacts match the order, if supplied

Store indoors in a dry, clean place, protected from condensation, corrosive fumes, impact and direct sunlight. Manufacturer-published operating guidance lists an altitude not exceeding 2000 m, ambient temperature from -5 °C to +40 °C, and relative humidity not exceeding 95%. Consult the supplier for conditions outside these limits.

4. Installation

Mount the switch rigidly inside a suitable electrical enclosure. Maintain adequate clearance for the handle, conductors, cable lugs and heat dissipation. The switch must not carry cable weight or mechanical strain.

• Use all designated mounting points and a flat, rigid mounting surface.

• Install in the orientation approved by the project design and ensure the handle position can be read clearly.

• Keep conductive dust, swarf and cable strands out of the mechanism and insulating body.

• Allow sufficient bending radius and support incoming and outgoing cables independently.

• Provide an enclosure degree of protection suitable for the location.

• After installation, operate the mechanism several times with all conductors de-energized to confirm free movement.

5. Electrical connections

The YGLZ assembly changes the load between Source I and Source II. Terminal orientation can vary by frame size and assembly arrangement. Identify each pole by the moulded markings, supplied diagram and continuity testing before energization. Do not wire solely from a generic picture.

3-pole system	4-pole system
Switch L1, L2 and L3. Protective earth remains permanently connected.	Switch L1, L2, L3 and N only where the neutral arrangement requires it. Protective earth remains permanently connected.

Connection procedure

• Confirm both sources are isolated, locked out and proved dead.

• Verify the switch model, conductor size and lug type against the approved design.

• Identify Source I, Source II and common/load terminals by the actual unit markings and continuity test.

• Prepare conductors without damaging strands. Use correctly sized, approved compression lugs and dies.

• Clean mating surfaces. Align each lug flat on its terminal pad; do not stack incompatible metals without an approved transition method.

• Fit the specified bolts, flat washers and locking hardware. Tighten to the value supplied for the actual terminal hardware. If no value is supplied, obtain it from IEP before energization - do not guess.

• Route conductors so no twisting, leverage or vibration is transferred to the terminal pads.

• Perform insulation resistance, protective conductor and phase-sequence checks required by the project before energization.

WARNING Incorrect terminal assignment can parallel two independent sources or back-feed a generator. Prove the switching sequence and open transition with continuity tests before applying power.

6. Commissioning

Complete the following checks with the load disconnected where practicable:

• Verify source voltages, frequency, phase sequence and neutral/earth arrangement.

• Confirm all barriers, covers and terminal guards are installed.

• Check that the handle clearly indicates Source I, OFF and Source II positions.

• Continuity-test every pole in each handle position. Confirm the non-selected source is isolated and that no pole bridges both sources.

• Energize one source at a time and confirm voltage at the intended load terminals.

• Perform an initial transfer with a reduced or non-critical load, then inspect for abnormal sound, smell, heating or arcing.

• Record the model, serial/nameplate information, test results and commissioning date.

7. Normal operation

1	Reduce or disconnect the load where the connected equipment or operating procedure requires off-load switching.
2	Move the handle positively from the active source to the central OFF position. Do not stop between indexed positions.
3	Confirm the first source is disconnected, then move positively from OFF to the required alternate source.
4	Confirm correct output voltage and phase sequence before restoring sensitive loads.

Do not force the handle, operate with tools or defeat an enclosure interlock. If the mechanism does not move freely and positively, isolate both sources and investigate.

8. Emergency isolation

Move the switch to OFF only if this can be done safely. The OFF position isolates the load through the switch, but incoming source terminals can remain energized. For safe work, isolate and lock out both upstream sources and prove all conductors dead.

9. Inspection and maintenance

Inspection intervals depend on load, switching frequency, fault level, environment and local maintenance rules. Inspect at commissioning, after the first period under load, after any fault event, and periodically thereafter.

Housing and insulation	Check for cracks, tracking, discoloration, contamination or moisture.
Terminals and lugs	Look for looseness, corrosion, oxidation, heat marks and cable movement. Re-torque only to the verified specification.
Operating mechanism	With all sources isolated, operate through all positions and confirm positive indexing without excessive play.
Contacts	If accessible under an approved service procedure, inspect for abnormal erosion, pitting or overheating. Do not file or lubricate contacts unless instructed by the manufacturer.
Frame and shaft	Check fasteners, alignment, mechanical supports and enclosure interlocks.
Temperature	Under representative load, use approved thermography or temperature checks to identify abnormal joints.

Cleaning

Isolate and prove dead. Remove loose dust with clean, dry, oil-free air at low pressure or a soft vacuum method suitable for electrical equipment. Wipe insulating surfaces with a dry lint-free cloth. Do not use water, conductive cleaners, abrasives or solvents that may attack the moulded insulation.

Replacement criteria

Replace the switch or obtain specialist assessment if there is cracking, carbon tracking, severe contact damage, distorted terminal pads, recurring overheating, a mechanism that does not index correctly, or evidence that fault current has passed through the assembly.

10. Troubleshooting

Handle difficult to move	Misalignment, mechanical damage, cable strain or contaminated mechanism	Isolate both sources. Do not force. Inspect mounting, shaft and mechanism; refer for service.
One phase missing	Incorrect wiring, loose joint, damaged contact or upstream fault	Isolate, prove dead, continuity-test each pole and inspect connections.
Terminal overheating	Loose/incorrect joint, undersized conductor, overload or damaged contact	Remove load and isolate. Correct the design/joint and inspect for permanent damage before return to service.
Arcing or burning smell	Switching fault, overload, loose connection or contact failure	Isolate immediately where safe. Do not re-energize until investigated by a qualified person.
Generator back-feed	Terminal assignment or system interlocking error	Emergency isolation of both sources. Verify wiring and open-transition operation before recommissioning.

11. Applicable information and limitations

Manufacturer product information states that the YGLZ series is intended for AC 50 Hz low-voltage circuits and references IEC 60947-3 and GB/T 14048.3 product requirements. Compliance of the completed installation depends on correct product selection, enclosure design, protective devices, conductors, workmanship, testing and local electrical regulations.

This manual is a general installation and operating guide. It does not replace the actual product nameplate, certified wiring diagram, project single-line diagram, engineering design, statutory rules or model-specific manufacturer data.

12. Installation and service record

Site / panel	
Model	
Serial / batch number	
Rated voltage	
Source I description	
Source II description	
Conductor and lug size	
Verified terminal torque	
Commissioning tests	
Commissioning date	
Installer name and registration	
Next inspection due	

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Technical references

YUYE Electric YGLZ product information: https://www.yuyeelectric.com/top-quality-single-phase-automatic-changeover-switch-load-isolation-switch-yglz-160-one-two-three-product/
YGLZ1 series technical data: https://www.maxge.eu/web/content/8734?download=true&filename=en_fichas+tecnicas_ficha_tecnica_YGLZ1.pdf
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