



## NYSOL8 - SWITCH DISCONNECTOR AND CHASSIS RATINGS AND FEATURES

The Nysol8 Chassis is a disconnect style chassis designed to fit a broad range of MCB's, providing a safer method for connecting, powering, and disconnecting MCB's from a chassis.

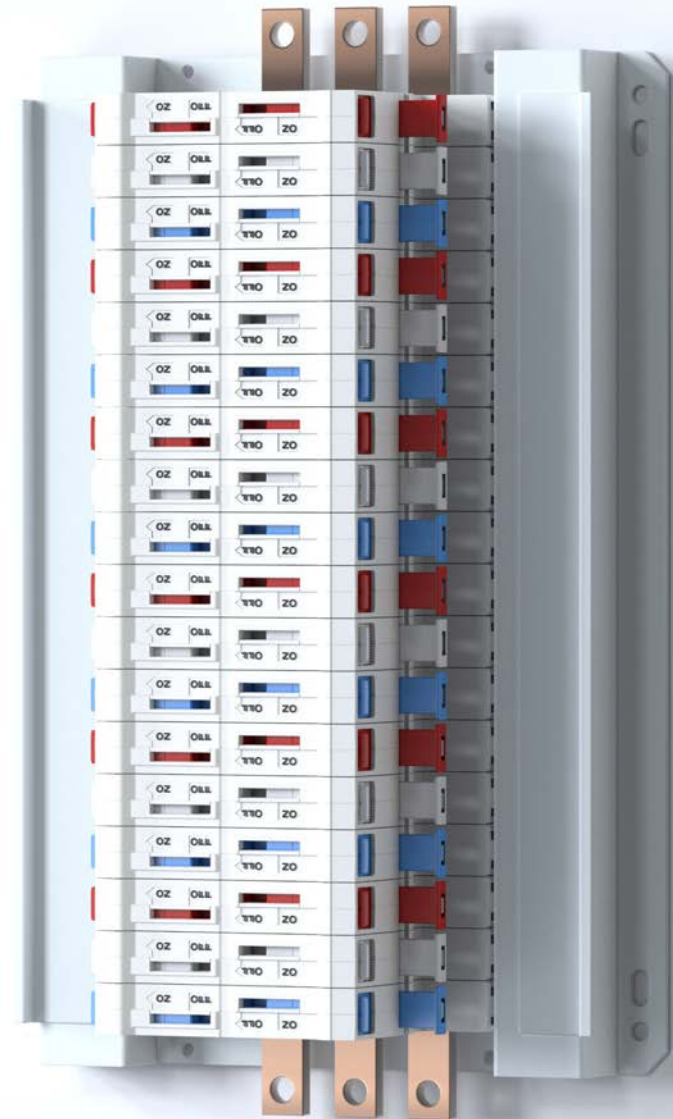
### FEATURES OF THE NYSOL8 CHASSIS

#### Compliance

- The Nysol8 chassis complies with standards for Isolating Switches (AS/NZS IEC 60947.3), Switchboards (AS/NZS 61439: and AS/NZS 3439) and Wiring Rules (AS/NZS 3000).
- The Nysol8 chassis is rated 250A, 10kA/1.0s, 36kA/0.1s and has been fully type tested to suit a large range of MCBs.
- Suitable to achieve compliance with all forms of separation as shown in AS/NZS 61439 Appendix ZC.

#### Construction

- A plastic enclosure to prevent contact with busbars.
- Tee offs which are insulated and isolated from the busbar by an interlocked isolating switch.
- An inbuilt manually operated isolating switch for every tee off which is interlocked with the tee off cover. The interlock is released when an MCB is correctly mounted in position.
- A sliding insulating cover (tongue) over each MCB line terminal which prevents access to the terminal screw and prevents contact with live parts and prevent MCBs being added or removed from live tee offs until the isolating switch is OFF.



### NYSOL8 36P DUAL FEED CHASSIS

SHOWN IN WHITE OPTION.  
PATENT PENDING.

## NYSOL8 CHASSIS RATINGS

Complies with AS/NZS 61439 and AS/NZS 3439.

Tested in a typical, non ventilated, panelboard enclosure with various brands of 63A MCBs rated 10kA and the Nysol8 switch in the circuit.

### Rated currents

$I_nA = 250A$  Assembly rating and busbar rating.

$I_{nc} = 0.8 \times 63A$  Maximum rated current of a single circuit.

*$I_n$  is the MCB marked current rating. MCBs with ratings less than 63A may have higher than  $0.8 \times I_n$*

### Short circuit withstand

$I_{cw} = 10kA/1.0s$  (Ipk 18kA),  $36kA/0.1s$  (Ipk 75kA); Short time current rating and peak current withstand.

$I_{cu} = 10kA$  prospective. Tee off and Nysol8 switch conditional short circuit withstand with MCB interruption of 10kA.

## Voltage Ratings and Insulation

$U_n = 415V$  Rated voltage.

$U_i = 440V$  Insulation voltage.

$U_{imp} = 4kV$ . Rated withstand impulse voltage.

Insulation withstand = 3.5kV Busbar enclosure, tee off insulation and Nysol8 actuator mouldings.

### Isolation

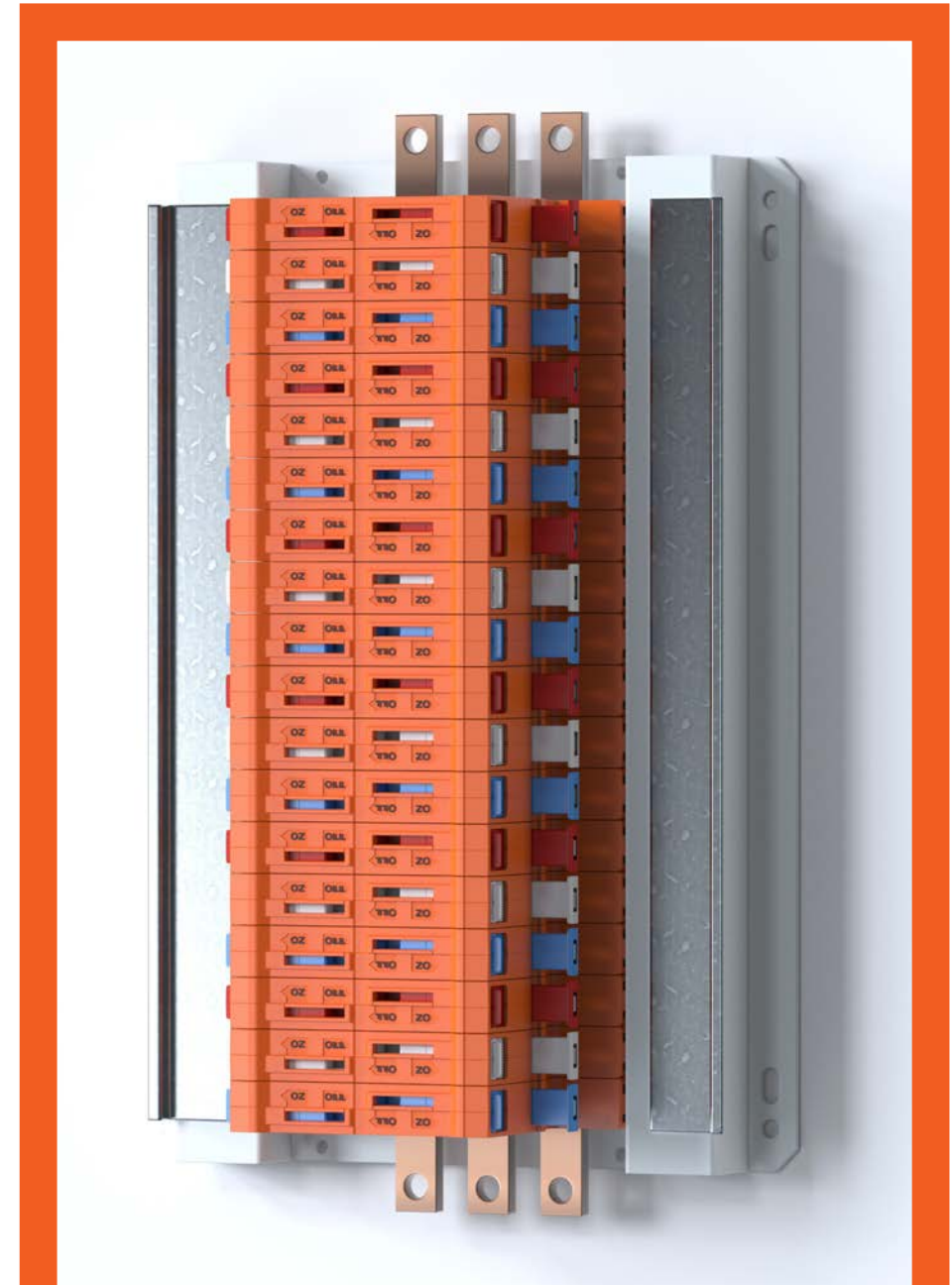
Suitable for isolation  to AS/NZS IEC 60947.3, AS/NZS 3439 and AS/NZS 61439.2

$U_{imp} = 4kV$ . Rated withstand impulse voltage.

(Symbol as required by AS/NZS 3000).

### NOTES

- Tested for compliance as a switch disconnecter suitable for isolation.
- AC21B at  $I_{nc}$  in a switchboard when connected to a 63A MCB to AS/NZS 61439, AS/NZS 3439.
- AC21B at 63A to AS/NZS IEC 60947.3.
- AC20B at 63A.
- For details of tests see below.
- Reports TUV 19301944 and TUV 19302087.



## NYSOL8 36P DUAL FEED CHASSIS

SHOWN IN ORANGE OPTION.  
PATENT PENDING.

## VERSATILITY

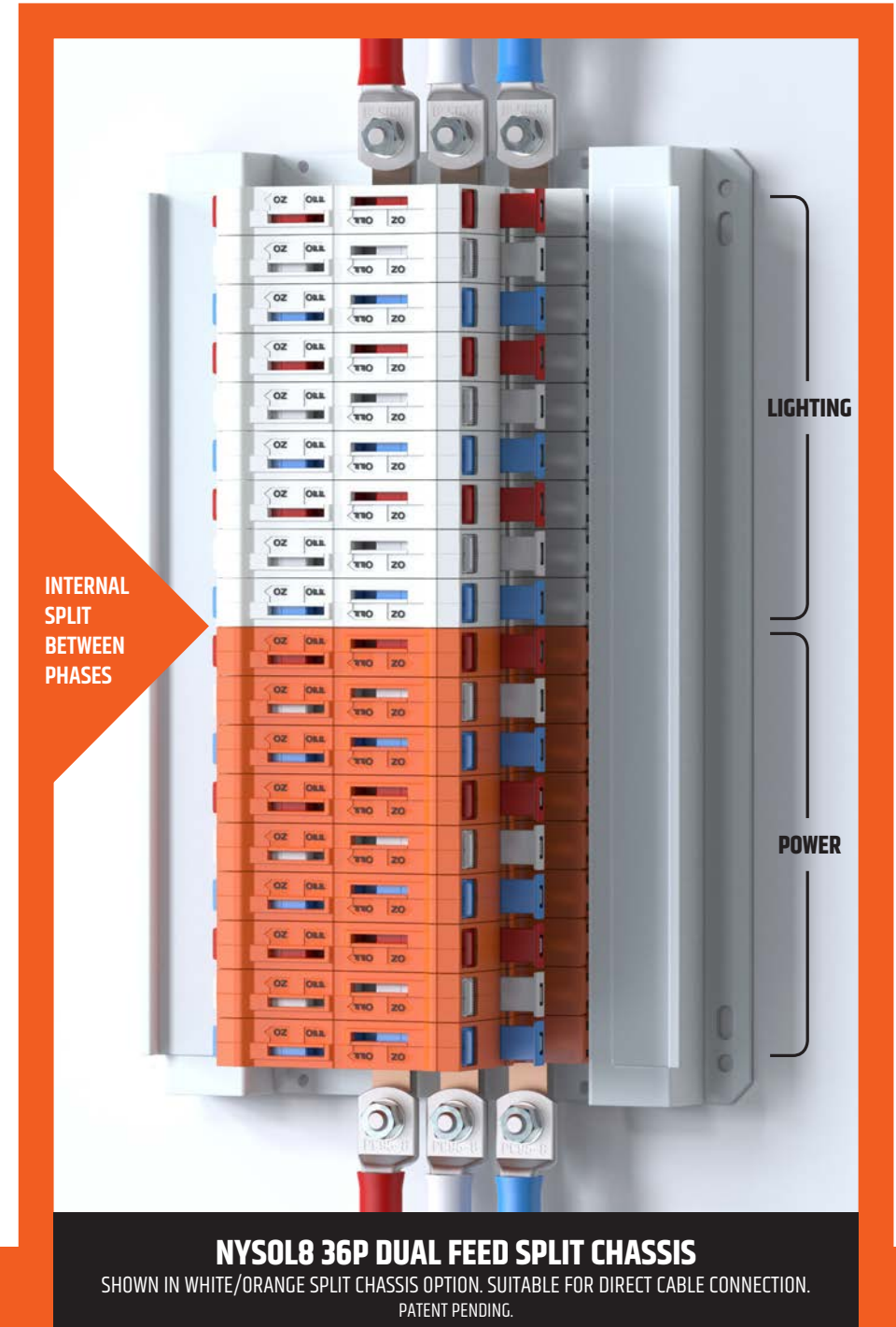
The Nysol8 chassis has many options:

- Suitable for a large range of different MCBs terminal heights
- Red, White, Blue, Black colour coding for phase tee off insulators and corresponding Nysol8 actuators for phase and neutral identification. Orange or white enclosure mouldings Eg. For different tariffs or different types of circuits
- Dual feeds with a split at any section without any increase in plastic enclosure length.
- Option to colour code split chassis. Eg. For different tariffs.
- Poles Standard 18mm pitch (27mm pitch by special order - soon to be released).
- RWB, three phase or single phase (Enquire for 3 phase actuator).
- RN, BN, WN Single phase + neutrals.
- RWBN , or NRWB four pole (three phase + neutral).
- Busbars for supply at one end. Suitable for side fed through a suitable isolating switch.

## IP RATING AND FORMS OF SEPARATION AND ISOLATION

*AS/NZS 61439.2 :2016, Clause 8.101, table 104.101 and Appendix ZC detail the requirements for forms of separation for this type of chassis.*

The Nysol8 chassis has an insulated enclosure , insulated tee off covers, an insulating tongue over the line terminals and an interlocked isolating switch operable only with a tool. This makes the Nysol8 chassis inherently suitable for Form 2b, 3bh, 4ah and 4bh when used with MCBs with IPXXB housings and terminals. The switchboard builder is responsible for the other requirements such as load side terminal covers, supply terminal insulation, location of terminals for outgoing conductors, compartmentalisation etc in accordance with appendix ZC diagrams.



### NYSOL8 36P DUAL FEED SPLIT CHASSIS

SHOWN IN WHITE/ORANGE SPLIT CHASSIS OPTION. SUITABLE FOR DIRECT CABLE CONNECTION.  
PATENT PENDING.

## OPERATING PROCEDURE

The Nysol8 provides interlocking to isolate the tee off from the supply until the MCB is in position allowing the Nysol8 switch to be manually moved from the OFF to the ON position

### Procedure sequence

- i. The Neutral must first be verified as being connected. This is to ensure safety against contacting a live part via the load and to ensure correct voltage distribution for multi-phase loads.
- ii. The MCB should be in the OFF position.
- iii. The MCB is pushed onto the tee off and latched onto the din rail. The sliding insulating cover will then be flush with the chassis moulding which will release the switch mechanism interlock.
- iv. The MCB terminal screw is tightened onto the tee off to the required torque.
- v. The OFF position of the MCB handle is verified. This is a precaution as the Nysol8 is rated to make and break up to three times the rated current but is not rated for motor loads.
- vi. The isolating switch can then be moved from the OFF to the ON position, to connect to the busbar and prevent access to the terminal screw by the insulated cover (tongue) which gives IPXXB to the line side terminal.
- vii. If work is to be performed on the circuit then the MCB should be locked OFF and tagged. The Nysol8 actuator should be in the OFF position.
- viii. If removing an MCB the above procedure is applied in reverse sequence. The MCB is switched OFF first and isolated. The neutral is then disconnected and the MCB is removed.



**NYSOL8 - SLIDING INSULATING COVERS**

PATENT PENDING.



## **NYSOL8: SUMMARY OF RATINGS TO AS/NZS IEC 60947.3, AS/NZS 3439 AND AS/NZS 61439**

### **Current ratings**

#### **AC20B**

Nysol8 is marked AC20B 63A.

This is for connecting and disconnecting under no load conditions but capable of carrying 63A continuously.

Tested for mechanical endurance 2000 operating cycles; at no load current.

AC20B

Disconnecter



#### **AC21B**

AC21B is for switching resistive loads and moderate overloads up to  $3 \times I_e = 189A$  (Not tested for motor loads).

AC21B rating ensures isolation if the NYSOL8 is switched before the MCB.

It is recommended that the MCB be used as the load making and breaking device as motor loads may exist.

AC21B

Switch-Disconnecter



### **Nysol8 Switch Disconnecter**

$I_e = 63A$  maximum.

AC21B Operational current.

## **PATENT PENDING DESIGN**

The Nysol8 switch disconnecter and chassis is a patent pending design.

## **DETAILS OF $I_e$ TESTS**

### **AC21B tests at $I_e$ 63A to AS/NZS IEC 60947.3**

Switching operational current ( $I_e$ ) 63A in a switchboard with the Nysol8 switching 63A connected to a 63A MCB.

- 1700 switching operations at no load + 300 operations with load current = 2000.
- Confirm mechanism and contacts suitable for service.
- In addition Nylec tests were carried out for strength of actuator with simulated contact weld at 150N.

### **AC21B tests for $I_e/I_{the}$ 63A x 0.8 to AS/NZS IEC 60947.3, for compliance with AS/NZS 3439 and AS/NZS 61439**

Switching operational current ( $I_e$ ) 63 x 0.8 de-rating factor in a switchboard with the Nysol8 connected to a 63A MCB.

- 1700 switching operations at no load + 300 operations with load current = 2000.
- Force to close and open (<150N).
- HV across the contact gap (1kV).
- Leakage current test across the gap (<0.5mA).
- Temperature rise limit of MCB line / Nysol8 load terminal and MCB load terminals = 70K.

#### **AC20B**

- Capable of carrying 63A.
- Mechanical endurance 2000 switching operations at no load with confirmation of the mechanism, contacts and isolation.