

# *KOENIGS Visual Isolators*

## Installation and Operation Manual

READ THESE INSTRUCTIONS CAREFULLY PRIOR TO USE

### WARNINGS

! The installation and electrical connection of this product must be carried out by a qualified electrician following installation standards and safety regulations required.

! Ensure that the isolator rating has been correctly selected for the supply voltage, rated motor and connection type or load.

! Do not apply power to the isolator if the grounding wire is disconnected.

! Live circuits may still exist within the isolator when the isolator is in the OFF position.

! Do not make any adjustments or alterations to the handle or internal mechanisms, latches or linkages.

**Failure to follow the above warnings or instructions outlined in this manual may void all warranties.**

Congratulations,

You are the recipient of an Australian made Koenigs Isolator, the foremost in isolator quality and design.

To ensure trouble free operation, please take time to read and fully understand the following instructions prior to installation or operation.

## **Mounting Instructions**

Ensure the surface and strength of the wall or structure the isolator is to be mounted on is sufficient to support the isolator.

Ensure all cables entering the isolator are supported on a suitable cable rack or tray and do not pull on or unduly stress the isolator mounts or gland plates where fitted.

Mount the isolator at a height such that the switches and pole indication can be clearly and easily viewed by the operator.

Allow at least 100mm of clear area on the handle side of the isolator to allow access to handle switching and isolator lockout facilities.

Standard Enclosure Mounting – 316 Stainless Steel & Powder Coated Zincanneal®.

- Back threaded mounting holes for mounting on walls with rear access
- Also supplied with additional mounting feet for front wall mounting.

Sloped Roof Enclosure Mounting - 316 Stainless Steel only.

- Supplied with integral flange type mounting holes

## **Wiring**

Wiring is to be installed by qualified electrician only.

Use only approved IP66 rated (or better ) cable glands for cable entries.

Ensure all cables are terminated using the specified torque settings listed in the “Specifications” section of this manual.

Ensure cable sizes do not exceed the maximum allowable cable size for the isolator as listed in the “Specifications” section of this manual.

## Operation – General Isolator Functions

All Koenigs Visual Isolators are equipped with a number of devices that help to prevent unsafe operational conditions. Listed below are general instructions that all persons operating the isolator must be aware of and perform to ensure the correct and reliable operation of the isolator.

- All Koenigs Visual Isolators have a viewing window to allow confirmation of the OPEN / CLOSED status of the isolator. Each pole face has coloured indication for easy verification of the isolator operation.

Visible Pole Colour	Isolator Position	Main Poles Status
GREEN	OFF	OPEN
RED	ON	CLOSED

- The front door is prevented from being opened if the isolator is in the ON position.
- The isolator cannot be switched to the ON position if the door is open.
- The isolator can only be switched ON if the door is fully closed and personal lock devices have been removed.
- A padlockable handle is provided to allow application of personal locking devices. Personal danger tags attached with string or deforming material must not be used to lock out the isolator.
- In isolators where trapped key interlocking is installed, isolator switching will be prevented or allowed dependant upon functional specifications required by the application. (Refer to the “Isolators Fitted with Trapped Key Interlocking” section of this manual).
- In isolators that have integral EARTH switches installed, earthing can only be achieved when the isolator is in the OFF position. Likewise, the isolator cannot be switched ON if the earth switch is EARTHED (Refer to “Isolators Fitted with Earthing Switches” section of this manual).

**ALWAYS CONFIRM THE ISOLATOR SWITCH POSITION BY CHECKING THE STATUS OF THE POLE INDICATION THROUGH THE VIEWING WINDOW PRIOR TO LOCKING OUT THE ISOLATOR**

### **Operation – General - Opening the Isolator Door**

- Ensure that the isolator is in the OFF position and the isolator handle is at the full extent of its travel.
- Rotate all locking points on the door with the supplied key clockwise to the full extent of their travel.
- Open the door. ( The isolator handle may require slight downward pressure to release the door latch )

**Note : Never use excessive force to open the door as damage to the internal mechanism may occur.**

### **Closing the Isolator Door**

- Ensure that the isolator is in the OFF position and the isolator handle is at the full extent of its travel.
- Prior to closing the door and with the supplied key, ensure all locking points are rotated clockwise to the full extent of their travel.
- Close the door and with the supplied key, in turn rotate all locking points anti-clockwise to the full extent of their travel. Failure to fully rotate all locking points will compromise the IP66 rating of the enclosure.
- The isolator is now ready to be switched to the ON position.

**Note : The isolator is designed for single handed operation of the handle. Never use excessive force to close the door or switch the isolator handle as damage to the internal mechanism may occur.**

## **Operation – Isolator Switching Function and Optional Configurations**

Koenigs Isolators can be configured with a number of different handle types, functional operations and control devices as required by the application. The following section details specific isolator functionality.

### **□ Isolators Fitted with Standard Locking Handle**

The Standard Locking Handle allows the switching of the isolator to the ON and OFF positions.

#### In the ON position :-

- The isolator main poles are CLOSED.
- The RED indicators on the pole faces are visible through the viewing window.
- The isolator door cannot be opened.
- The isolator cannot be “locked out”.
- The isolator can be switched to the OFF position.

#### In the OFF position :-

- The isolator main poles are OPEN.
- The GREEN indicators on the pole faces are visible through the viewing window.
- The isolator door can be opened with the supplied key.
- The isolator can be “locked out” using a personal safety lock device inserted into the locking hole provided on the handle.
- The isolator can only be switched to the ON position if
  - the door is fully closed, and
  - the personal safety lock has been removed, and
  - is not inhibited by additional earth or trapped key functions.

## □ Isolators Fitted with Slide Locking Handle – 2 Position

The Slide Locking Handle – 2 Position allows the switching of the isolator to the ON and OFF positions and includes a slide locking bar. The isolator can only be locked out with a personal safety lock device when the slide locking bar is engaged.

### In the ON position :-

- The isolator main poles are CLOSED.
- The RED indicators on the pole faces are visible through the viewing window.
- The isolator door cannot be opened.
- The isolator cannot be “locked out”.
- The isolator can be switched to the OFF position.

### In the OFF position :-

- The isolator main poles are OPEN.
- The GREEN indicators on the pole faces are visible through the viewing window.
- The isolator door can be opened with the supplied key.
- The isolator can only be “locked out” by pushing the locking slide forward into the slide capture hole which reveals the locking hole allowing insertion of a personal safety lock device.
- The isolator can only be switched to the ON position if
  - the door is fully closed, and
  - the personal safety lock has been removed, and
  - the locking slide locking bar is retracted, and
  - is not inhibited by additional earth or trapped key functions.

### □ Isolators Fitted with Slide Locking Handle – 3 Position

The Slide Locking Handle allows the switching of the isolator with three distinct positions. They are :-

ON  
OFF (Lockable & Door Retained), and  
OFF ( Door Release ) fully rotated position.

In the ON position :-

- The isolator main poles are CLOSED.
- The RED indicators on the pole faces are visible through the viewing window.
- The isolator door cannot be opened.
- The isolator cannot be “locked out”.
- The isolator can be switched to the OFF position.

The OFF ( Lockable & Door Retained ) position :-

This position ensures that the door cannot be opened even though the isolator is in the OFF position.

The handle must be first switched OFF to the full extent of its travel, the OFF ( Door Released ) position then returned to the OFF ( Lockable & Door Retained ) position.

Note : The designed shape of the locking slide forces the operator to fully switch the handle to the OFF ( Door Release ) position then allows the slide to be pushed forward. The handle can then be returned to the OFF (Lockable & Door Retained) position.

- The isolator main poles are OPEN.
- The GREEN indicators on the pole faces are visible through the viewing window.
- The isolator door **cannot** be opened.
- The isolator can only be “locked out” by pushing the locking slide forward into the slide capture hole which reveals the locking hole allowing insertion of a personal safety lock device.
- The isolator can only be switched to the ON position if
  - the door is fully closed, and
  - the personal safety lock has been removed, and
  - the locking slide retracted, and
  - is not inhibited by additional earth or trapped key functions.

In the OFF ( Door Released ) position :-

This position is achieved when the handle is in the OFF position and at the full extent of its travel

- The isolator main poles are OPEN.
- The GREEN indicators on the pole faces are visible through the viewing window.
- The isolator door can be opened.
- The isolator cannot be “locked out”.
- The isolator can only be switched to the ON position if
  - the door is fully closed, and
  - the personal safety lock has been removed, and
  - the locking slide retracted, and
  - is not inhibited by additional earth or trapped key functions.

**□ Isolators Fitted with Auxiliary Contacts**

Koenigs Visual Isolators are fitted with up to 2 individual auxiliary contact sets per isolating or earth switch for use in control and indication circuits.

Auxiliary contact form is SPDT ( Single Pole Double Throw ) with quick connect terminals.

63A, 100A, 125A & 160A Isolators are fitted with auxiliary contacts rated  
2A @ 250VAC  
3A @ 30VDC

250A, 400A, 630A & 800A Isolators are fitted with auxiliary contacts rated  
5A @ 250VAC  
3A @ 30VDC

All factory installed auxiliary contact sets are pre-wired to feed through DIN rail mounted terminals.

**□ Isolators Fitted with Control Equipment**

Koenigs Visual Isolators can be configured with door mounted control push buttons, switches and indication lamps etc. as required by customer applications.

All installed control equipment is pre-wired to DIN rail mounted feed through terminals.

Refer to customer documentation for any operational, control schematic, wiring and terminal details.

### □ Isolators Fitted with Earthing Switch

Koenigs Visual Isolators can be configured with additional Earthing Switches that enable isolation of the incoming supply line and earthing of the outgoing load.

Earthing Switches are configured with two mechanically interlocked handles that prevent simultaneous operation of the isolator and earthing switch as described below.

- The Earthing switch is mechanically inhibited from switching to the EARTH ON position whilst the Isolating Switch is ON.
- The Earthing switch can only be switched to the EARTH ON position if the Isolating switch is OFF and at the full extent of its travel.
- The Isolating switch is mechanically inhibited from switching to the ON position whilst the Earthing switch is in the EARTH ON position.
- The Isolating switch can only be switched to the ON position if the earthing switch is in the EARTH OFF position and at the full extent of its travel.

Refer to “Isolator Inspection & Test Sheet” that accompanies all Koenigs Visual Isolators that identifies specific isolator functionality as required by customer applications.

**Note : Never use excessive force to when operating the Isolator or Earthing switches or attempt to operate both switches simultaneously as damage to the internal mechanism may occur.**

### □ Isolators Fitted with Trapped Key Interlocking

Koenigs Visual Isolators can be configured with Trapped Key Interlocking as required by customer applications.

Refer to “Isolator Inspection & Test Sheet” that accompanies all Koenigs Visual Isolators that identifies specific isolator functionality as required by customer applications.

## Maintenance

The Koenigs Visual Isolator is designed to be maintenance free for the life of the switches installed. (Refer to the “Specifications” section of this manual for mechanical & electrical life of installed switches).

However, periodic inspection should be undertaken by a qualified electrician of the following items as specified in the table below.

Activity	Period	Corrective Action
Clean viewing window.	As required	Clean with soft clean damp cloth.
Check enclosure door, seal and locks for damage and proper sealing.	6 monthly	Contact manufacturer. Seals are not user replaceable.
Check handle for signs of wear or damage.	6 monthly	Contact manufacturer.
Check Isolator mounting fixtures.	6 monthly	Tighten, repair or replace as required.
Check door latch operation – door released in OFF position and locking points rotated fully open only.	3 monthly	Contact manufacturer.
Check Isolator can only be switched to the ON position with the door fully closed and locked.	3 monthly	Ensure all locking points are operated to the full extent of their travel. Ensure all other Trapped Key and Earthing conditions are met. Contact manufacturer.
Visually check internal linkages, shafts, cams and springs for signs of abnormal wear or breakage.	6 monthly	Contact manufacturer.
Check internal mounting of switches, mounting pan and any other internally mounted devices are tight and secure.	6 monthly	Refer to Specifications for torque settings of switch mounting. Tighten as required.
Check all electrical switch terminations and terminals are tight and secure.	6 monthly	Refer to Specifications for torque settings of terminations. Tighten as required.
Check operation of auxiliary contacts (where fitted) - late make , early break	6 monthly	Contact manufacturer for auxiliary contact set replacement.
Check condition of switch main contacts for signs of excessive burning or damage and clear and visible GREEN – OFF and RED – ON indicators.	1 monthly or when operated.	Contact manufacturer for switch replacement.

**WARNING - Do not attempt to adjust or modify the handle, mechanical linkages or latches in the isolator.**

## Specifications

Index of Protection IP66

Isolator Rating	63A	100A	125A	160A
Terminal type	cage			
Cable size ( Cu flex ) ( Cu rigid )	4 to 50mm <sup>2</sup> 4 to 70mm <sup>2</sup>			
Insulation voltage	800VAC			
Rating Utilization Category AC23 415V	63A ( 35kW )	100A ( 55kW )	125A ( 70kW )	160A ( 90kW )
Dynamic withstand (kA peak)	15			
1 sec withstand Icw (kA rms)	3.5			
Icc with fuse (kA)	100			80
Short Circuit making capacity Icm (kA prospective peak )	7	12	12	12
Mechanical endurance (No. of operations)	30,000			
Torque settings of switch terminals ( Nm )	6			

Isolator Rating	250A	400A	630A	800A
Terminal bolt size	Ø10mm	Ø12mm		4 x Ø8mm holes 1 x Ø13mm holes
Cable lug size)	120 to 185mm <sup>2</sup>	150 to 240mm <sup>2</sup>		2 x 150 to 2 x 240mm <sup>2</sup> or 2 bars 30 x 5
Insulation voltage	800VAC	1000VAC		
Rating Utilization Category AC23 400V	250A ( 139kW )	400A ( 230kW )	630A ( 370kW )	800A ( 350kW )
Dynamic withstand (kA peak)	20	30	40	
1 sec withstand Icw (kA rms)	9	12	15	
Icc with fuse (kA)	100			
Short Circuit making capacity Icm (kA prospective peak )	20	30	35	
Mechanical endurance (No. of operations)	20,000		5,000	
Torque settings of switch bolted terminals ( Nm )	50			15