

Solar Isolator Range



Bright solutions

IMO is at the forefront of control component technology specifically developed for the renewable energy market and in particular solar energy. Whether meeting the demands of safe and efficient DC switching or delivering solutions that help to maximise solar energy conversion rates, you can be sure that IMO products have been developed to meet the highest technical and commercial standards.

Enclosed TRUE DC Isolators



Specifically developed for arduous DC disconnect applications, the IMO range of Solar Isolators features an operator independent trigger ratchet switching mechanism resulting in switching times of less than 5ms. High reliability knife edge contacts and long arc cooling chambers ensure safe and effective isolation of DC voltages within solar installations.

Available in 2 to 8 pole versions in a wide variety of mounting and handle configurations, the IMO Solar Isolator range is suitable for most site installation applications.

Solar Connectors

IMO's range of mobile connectors are used to connect PV panels in series. They also link between lengths of cabling and allow connection to Branch and Panel connectors.

Branch connectors are used to link multiple strings together allowing, for example, a 2 pole (single string) DC isolator to switch both strings at the same time removing the need to use 2 isolators.

Panel connectors mount on solar string boxes, enclosed DC isolators and any other enclosed DC switching device allowing easy connection to the rest of the PV system.



Solar Relays & Terminals

IMO's range of Solar Relays have been specifically developed to meet the high contact gap and insulation requirements of modern solar applications. Along with our comprehensive range of PCB and DIN Rail Terminal Blocks, IMO products provide the greatest flexibility to meet the most demanding solar OEM demands.



AC Isolators

IMO's range of enclosed IP65 rated AC isolators includes 3 to 8 pole versions rated from 20A to 80A. The design also includes an interlocked enclosure lid and 3 padlockable positions for safety.

OEM True DC Isolator

All the features and benefits of the IMO True DC Isolator available in Panel, Din Rail and Base mounting versions for incorporation into solar OEM design.



Think PV.. ..Think **Safety!**

DC Switching

The IMO SI is a True DC switch not an AC version de-rated or re-wired for DC operation.

Features include:

- Operator independent switching mechanism
- High speed trigger ratchet switching (5ms max)
- IP65 rated enclosure with top and bottom M25/M20/M16/M12 push outs and rear cable entry
- Fully enclosed internal switch without additional wiring for maximum safety
- Knife edge contacts and arc cooling chambers
- High reliability rotary snap action mechanism
- Maximum 1Nm torque for easy operation
- Compact space saving design
- 16mm² box terminals for easy wiring

The IMO SI range has a switching speed that is independent of the operator. The mechanism is such that there is no direct linkage between the operator handle and the switch contacts. As the handle is moved it interacts with a spring mechanism which, upon reaching a set point, causes all the contacts to “SNAP” over thereby ensuring a very fast break/make action which means that the arcs produced by the constant DC load are normally extinguished within 5ms. Many alternative solutions, particularly those based upon AC isolator design, have a switching speed that is directly linked to operator speed. Slow operation of the handle results in slow separation of the contacts and can produce arcing times of 100ms or more.

The SI range also features a “knife edge” mechanism so that when the unit is operated there is a double break on each pole with arcing effect occurring on the corners of the switch only. The main contact is made on an area where no arcing has occurred. The rotary nature of the contact mechanism also means that when the SI is operated a self-cleaning action occurs on the arcing points, thereby producing good contact integrity over the life of the product. A secondary advantage of this type of operation in photovoltaic applications is that, in the event of a supply to earth failure, the short circuit current pulls the contacts together thereby giving an extremely high short circuit current capability in the order of up to 1700A (product dependant).

Completing the package for all your PV instalation requirements is the IMO range of Solar Connectors. Rated up to 1000V 30A for 2.5-6mm² cables, the IMO connectors feature a secure easy clip and release system providing the installer with a time saving and efficient connector solution. As with all IMO PV products the connectors have been tested to the highest standards and come rated with IP67 protection, UL-94-5VA fire resistance and provide class 2 protection.



Solar Isolators for Photovoltaic Applications

The IMO SI Solar Isolator range has been specifically developed as a True DC switch to disconnect the DC/AC inverter from the photovoltaic panels as illustrated. All photovoltaic installations have to be equipped with DC isolators in accordance with IEC 60364-7-712.

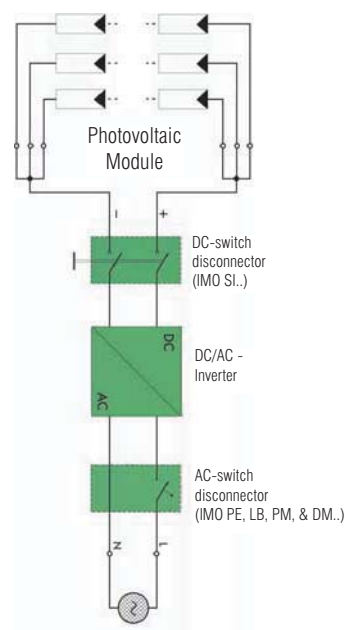
Key Features:

- Available in 2 to 8 pole versions
- Compact space saving design
- Operator independent trigger ratchet switching mechanism for high speed switching (5ms max)
- Knife edge self cleaning contact mechanism
- Long arc cooling chambers
- Maximum torque 1Nm for easy operation
- Large box terminals with 16mm² cross sectional area for easy wiring
- Available in a wide variety of mounting and handle configurations



G83/1 Compliant

We recommend installers label equipment:
"Danger - Contains live parts during daytime".



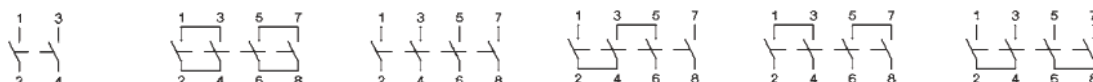
				Lever Actuator Versions				
Type	I _{th} Open A	DC21B at U _e 4 Poles in series A	V	Panel Mounting	Single hole mounting Ø22.5mm	Base mounting w. door coupling	Modular switch	Plastic enclosure
SI16	16	16	1000	..PM64..	..SHM..	..BMDC64..	..DB..	..PEL64..
SI25	25	25	1000	..PM64..	..SHM..	..BMDC64..	..DB..	..PEL64..
SI32	32	32	1000	..PM64..	..SHM..	..BMDC64..	..DB..	..PEL64..

Standard Actuator Versions					Emergency Stop Versions				
Panel Mounting	Single hole mounting Ø22.5mm	Base mounting with door coupling	Modular switch	Plastic enclosure	Panel Mounting	Single hole mounting Ø22.5mm	Base mounting with door coupling	Modular switch	Plastic enclosure
..PM64R..	..SHML..	..BMDC64R..	..DBL..	..PEL64R..	..ES-PM64R..	..ES-SHM..	..ES-BMDC..	..ES-DB..	..ES-PEL..
..PM64R..	..SHML..	..BMDC64R..	..DBL..	..PEL64R..	..ES-PM64R..	..ES-SHM..	..ES-BMDC..	..ES-DB..	..ES-PEL..
..PM64R..	..SHML..	..BMDC64R..	..DBL..	..PEL64R..	..ES-PM64R..	..ES-SHM..	..ES-BMDC..	..ES-DB..	..ES-PEL..

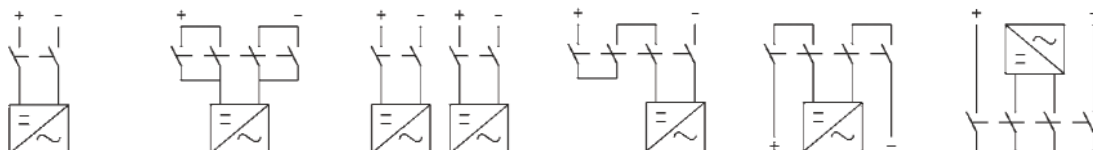
Switching Configurations

Type	2-pole	2-pole 4 Paralleled poles	4-pole	2-pole with Input on top Output bottom	2-pole with Input and Output bottom	2-pole with Input and Output on top
SI16	2	2H	4	4S	4T	4B
SI25	2	2H	4	4S	4T	4B
SI32	2	2H	4	4S	4T	4B

Contacts
Wiring diagram

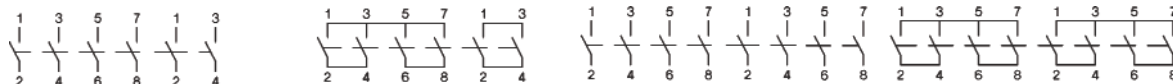


Switching example

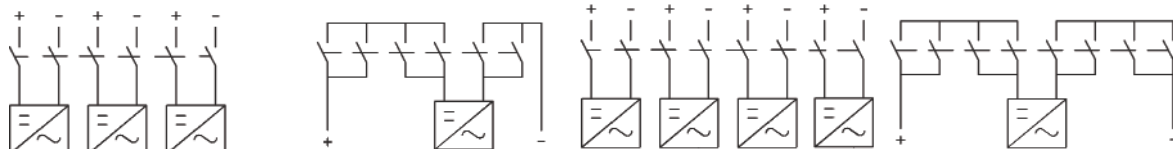


Type	6-pole	2-pole 6 paralleled poles	8-pole	2-pole 8 paralleled poles
SI16	...6	...3H	...8	...4H
SI25	...6	...3H	...8	...4H
SI32	...6	...3H	...8	...4H

Contacts
Wiring diagram



Switching example



Insulated Jumper SIV-B1 for series and parallel switching of contacts

Type	Pack	Weight
SIV-B1	1	6.6g/pc



Rotary Actuator Switch - Lockable Off in Plastic Enclosure



- Rotary Actuator Switch
- Lockable Off
- Plastic Enclosure
- IP65
- NEMA Type 1



DC21B Rating							Poles in series	Number of Strings	Weight kg/pcs.	Part Number	Contact Configuration
600V	700V	800V	900V	1000V	1200V	1500V					
16A	16A	16A	13A	9A	6A	3A	2	1	0.43	SI16 PEL64R 2	
25A	23A	20A	16A	11A	8A	4A	2	1	0.43	SI25 PEL64R 2	
32A	27A	23A	20A	13A	10A	5A	2	1	0.43	SI32 PEL64R 2	
29A	16A	16A	13A	9A	6A	3A	2	1	0.49	SI16 PEL64R 2H	
45A	23A	20A	16A	11A	8A	4A	2	1	0.49	SI25 PEL64R 2H	
50A	27A	23A	20A	13A	10A	5A	2	1	0.49	SI32 PEL64R 2H	
16A	16A	16A	13A	9A	6A	3A	2	2	0.46	SI16 PEL64R 4	
25A	23A	20A	16A	11A	8A	4A	2	2	0.46	SI25 PEL64R 4	
32A	27A	23A	20A	13A	10A	5A	2	2	0.46	SI32 PEL64R 4	
16A	16A	16A	16A	16A	16A	16A	4	1	0.47	SI16 PEL64R 4S	
25A	25A	25A	25A	25A	25A	20A	4	1	0.47	SI25 PEL64R 4S	
32A	32A	32A	32A	32A	32A	23A	4	1	0.47	SI32 PEL64R 4S	
16A	16A	16A	16A	16A	16A	16A	4	1	0.47	SI16 PEL64R 4T	
25A	25A	25A	25A	25A	25A	20A	4	1	0.47	SI25 PEL64R 4T	
32A	32A	32A	32A	32A	32A	23A	4	1	0.47	SI32 PEL64R 4T	
16A	16A	16A	16A	16A	16A	16A	4	1	0.47	SI16 PEL64R 4B	
25A	25A	25A	25A	25A	25A	20A	4	1	0.47	SI25 PEL64R 4B	
32A	32A	32A	32A	32A	32A	23A	4	1	0.47	SI32 PEL64R 4B	
16A	16A	16A	13A	9A	6A	3A	2	3	1.57	SI16 PEL64R 6	
25A	23A	20A	16A	11A	8A	4A	2	3	1.57	SI25 PEL64R 6	
32A	27A	23A	20A	13A	10A	5A	2	3	1.57	SI32 PEL64R 6	
16A	16A	16A	13A	9A	6A	3A	2	4	1.62	SI16 PEL64R 8	
25A	23A	20A	16A	11A	8A	4A	2	4	1.62	SI25 PEL64R 8	
32A	27A	23A	20A	13A	10A	5A	2	4	1.62	SI32 PEL64R 8	
29A	29A	29A	29A	29A	29A	16A	8	1	1.67	SI16 PEL64R 4H	
45A	45A	45A	45A	45A	45A	20A	8	1	1.67	SI25 PEL64R 4H	
58A	58A	58A	58A	58A	50A	23A	8	1	1.67	SI32 PEL64R 4H	

Unrivalled Choice From the World's Finest



From a single product to a complete application solution, IMO has the product range and knowledge to meet today's most demanding application requirements.

IMO is at the forefront of control component technology specifically developed for the renewable energy market and, in particular, solar energy. Whether meeting the demands of safe and efficient DC switching or delivering solutions that help to maximise solar energy conversion rates, you can be sure that IMO products have been developed to meet the highest technical and commercial standards. A selection of our solar energy products are illustrated below:



Solar Isolators

Specifically developed for arduous DC disconnect applications, the IMO range of Solar Isolators feature an operator independent trigger ratchet switching mechanism resulting in switching times of less than 5ms. High reliability knife edge contacts and long arc cooling chambers ensure safe and effective isolation of DC voltages within solar installations.

Available in 2 to 8 pole versions in a wide variety of mounting and handle configurations, the IMO Solar Isolator range is suitable for most OEM or site installation applications.



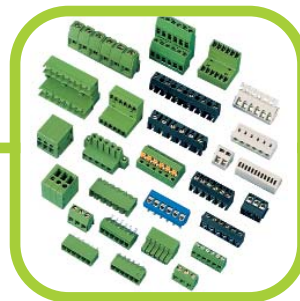
Solar Relays

Long a market leader in pcb and industrial relay technology, IMO has introduced a range of solar relays specifically developed to meet the high contact gap and insulation requirements of modern solar applications.

The features include:

- High reliability 1 pole or 2 pole contact configurations
- PCB and chassis mount versions
- High switching capacity of up to 31A available
- Contact gap of up to 3mm available
- Dielectric strength ratings of up to 5KV

Whatever the requirement, IMO's range of solar relays offer the most advanced solution for your applications needs.



PCB Terminals

Our comprehensive range of PCB terminal blocks include, cable to board, plug and socket and screwless technologies giving the greatest flexibility to meet the most demanding Solar design applications. Suitable for both system (DC) or consumer (AC) side of the installation benefits include:

- Pitches up to 15.24mm
- Cable entry sizes up to 16mm²
- Rated up to 76A @ 1000VAC (IEC) and 57A @ 600VAC
- Multiple decks available up to three rows.
- Screw flange versions available to ensure connection integrity.
- Screwless plugs available to reduce assembly time.



iCube Controller

The iCube Intelligent Controller combines reliable PLC technology, display interface and the most advanced communications options into a single economical simple to program unit. Used in combination with luminosity sensor equipment the iCube operates as the ideal tracking device to control solar panel orientation and ensure maximum installation efficiency.

Its IP65 rating enables it to be mounted externally if required and its Modbus communications give seamless connectivity to other energy devices such as power meters. The optional GPRS/GSM modem transforms the iCube enabling remote access, text messaging and emailing.



Solar Connectors

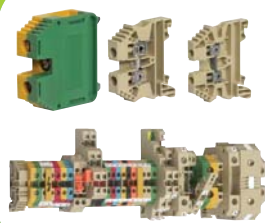
Mobile connectors are used to connect PV panels in series, allow cabling to be linked together and provide connection to Branch and Panel connectors.

Branch connectors are used to link multiple strings together.

Panel connectors mount on solar string boxes, enclosed DC isolators and any other enclosed DC switching device allowing easy connection to the rest of the PV system.

Key Features:

- 1000V DC 30A Rated
- For 4-6mm² Cables
- Secure Easy Clip and Release System
- IP67 Protection
- UL94-5VA Fire approved
- Class 2 Protection



DIN Terminals

The IMO range of DIN Rail Terminals provides a host of features including UL and ATEX approvals, multiple colour options and easy marker system with plotter for the solar OEM engineer.

Strengthened crossbars ensure high reliability and all terminals are supplied open for rapid assembly or installation.

Available in sizes from 2.5mm² to 240mm and in Screw or Spring clamp versions, the IMO DIN Rail Terminal range has the right solution for today's solar OEM applications.



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