



# INOSYS *LBS*

Load Break Switches incorporating tripping function from 100 to 1250 A, up to 1500 VDC  
DC and PV applications



your energy  
our expertise



 **socomec**  
Innovative Power Solutions

# Safe & reliable installations

Total reliability and guaranteed safety, combined with low maintenance costs, are vital when selecting components for integration into your DC distribution. Photovoltaic and DC installations must be able to perform in all conditions, even extreme operating environments. INOSYS LBS have been specifically engineered and tested for the most demanding applications.



SITE 701 A



COUV 187 A

## Complete safety

To meet the requirements of **harsh PV environments**, the INOSYS LBS can be **easily integrated** in any location of the PV installation (combiner box, recombiner box or inverter) and are also particularly **suitable for safety applications** such as firefighter switches.

## Total reliability

INOSYS LBS are the right choice for DC distribution applications requiring **high reliability, compliance with multi-standards** and **low maintenance**.

### SOCOMEK, your best asset

#### European manufacturing group

- Created in 1922.
- A workforce of almost 3000.
- Located on all five continents.

#### A culture of independence

- Family shareholding.
- Control of the decision-making process.
- Respect of human values.

#### The spirit of innovation

- Almost 10% of turnover is invested in R&D.

#### A flexible manufacturing structure

- Competitive production sites.
- Lean Management.
- Lead times, quality and cost guaranteed.

#### The vision of a specialist

- Expertise in core technologies.
- Product adaptations as per customer requirements.

#### A focus on service

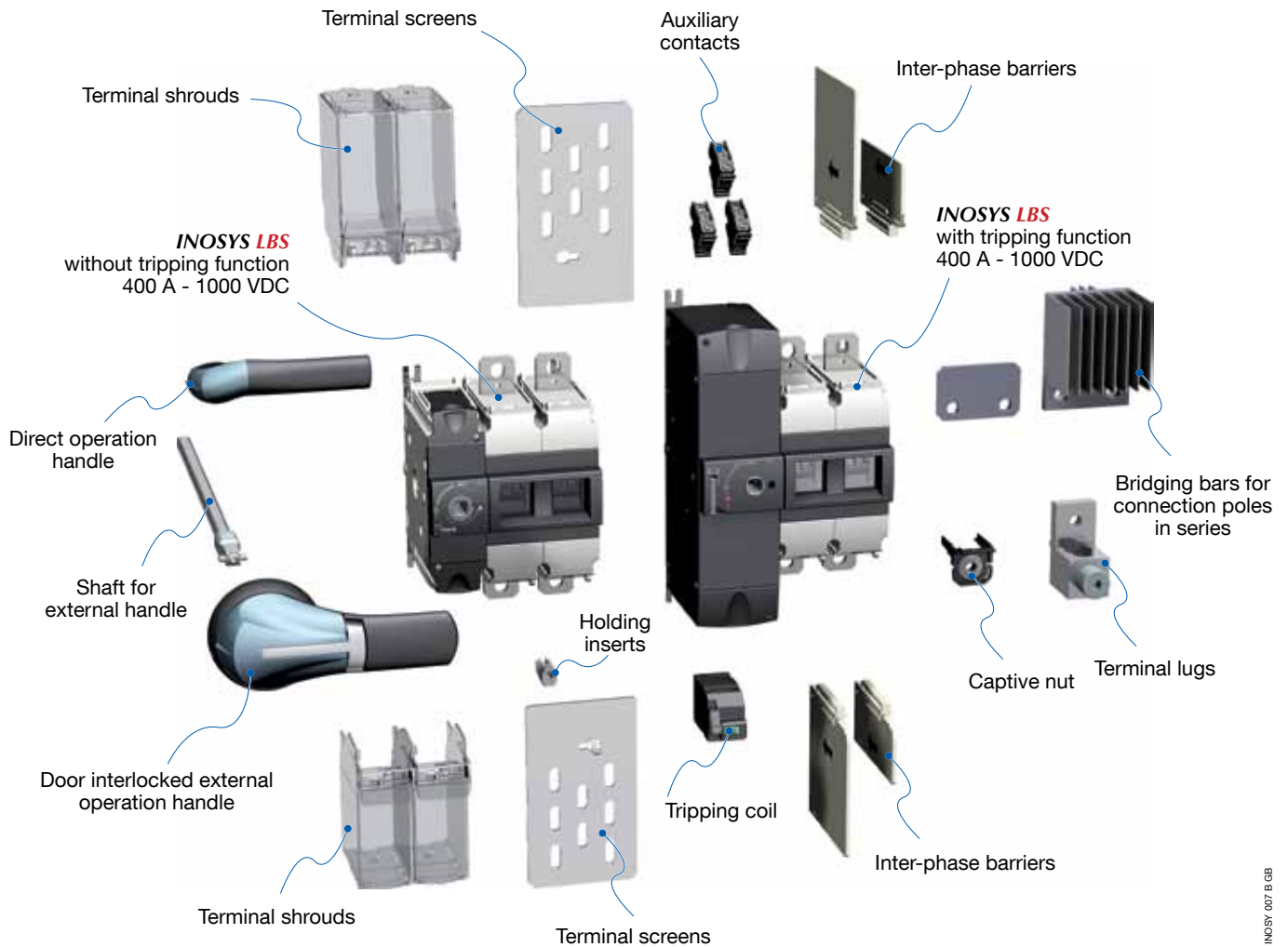
- Advice, technical assistance and call-out, training, etc.
- Teams located across the globe.

**ENERGY  
SPECIALIST**  
SINCE 1922



# INOSYS LBS

The perfect combination of proven switch technology with remote tripping function



INOSYS 007 E GB

Switch to innovation, benefit from the experience of a world leader in industrial switching

#### Highest safety level

- Visible blade indication.
- Disconnection and isolation function.
- Remote tripping function.
- High-performance switching.

#### Extreme reliability

- Robust design, tested in extreme conditions.
- Manufactured using long-lasting, stable raw materials.
- Stable On, Off and Trip positions.

#### Full power availability

- No nuisance tripping; trips only when necessary.
- High withstand to temperature (both high ambient and cycling temperatures).

# Ultimate safety



## Tripping function

- > Fast remote disconnection for on demand shutdown/ de-energisation
- > Robust operation for maximum uptime and no nuisance tripping

### Robust

- Fully immune to any voltage perturbation (tripping mechanism completely independent from the power poles).
- Designed and tested to withstand large temperature fluctuations.

### Reliable

- Fast operation ensured under any conditions (more than 30 kg of power embedded in the switch actuator).
- Usage of high power coil for high reliability over time.

### Versatile

- 2 different actuators means: shunt-trip coils or undervoltage release from 24 to 220 VDC and from 24 to 230 VAC.



Switch disconnector with undervoltage release. Switch disconnector with shunt-trip.

- Compatible with virtually any electronic protection device (arc-fault detection system, battery protection, etc.).

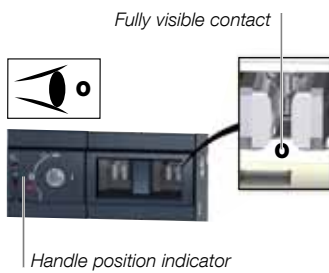


## Clear visible contact indication

- > Safe operation under any circumstances

### Reliable switch position

- Handle position indicator.
- Fully visible contacts.
- True contact state position indicator.



### Optimum arc containment

- Fast arc quenching for limiting arc energy (patented dual magnetic and arc chute chamber technology).
- Specific arc chute to keep the arc located behind the cover.

## Firefighter emergency switch

Via undervoltage release or shunt-trip coil combined with position auxiliary contacts, the switches can be used for firefighting operations to completely disconnect any dangerous voltage in the electrical installation.



The tripping of the switch provides an extremely fast disconnection (< 50 ms), which is fully compliant with installation standard IEC 60364-7-712 & NEC art. 690.12.

## Global approvals

INOSYS LBS disconnect switches with trip function meet UL 98B, IEC 60947-3/GB14048.3 and bear the CE mark. The use of Socomec's range within your design enables the development of a standardised, global offer.



## Enhanced disconnection and isolation

- > Ensures the safety of the electrical maintenance personnel

- Stable ON, OFF & Trip positions resistant to external perturbation.
- Guaranteed disconnection in both OFF & Trip positions.

- Real disconnection, fully compliant with IEC & NEC installation standards.
- Padlocking in OFF position available directly on the switch and on the external handle.

- Double isolation between auxiliary contacts and main power.
- Protection cover against indirect contact with auxiliaries.



# Optimum performance



## Highly reliable solution

> Optimum performance during the complete installation lifecycle

### Patented switching technology

- **Low power dissipation:** up to 4 times less than standard switches thanks to 500 VDC per pole switching capability.
- **Guaranteed safety:** the contacts opening and closing speed is fully independent of the handle operation.
- All models are certified by UL, even for 1500 VDC - a world premier.

### Long lasting stable raw materials

INOSYS LBS is an extremely robust product, with all casings made from fiber glass reinforced polyester materials that provide:

- high mechanical withstand,
- high stability to temperatures (RTI of 130 °C),
- high dielectric performance (high CTI/tested according to ASTM D 2303).

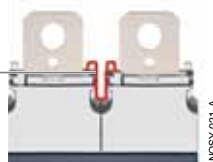
### High temperature withstand

- No derating up to 55 °C (131 °F)
- Wide operating temperature from -25 to +70 °C (-15 to +160 °F).

### Guaranteed isolation over time

- Designed with materials that maintain structural integrity.
- Increased creepage distance (doubled compared to IEC 60947-3 standard requirements) to ensure no isolation failures.

53 mm (2 in)  
creepage distances



## External handles

The INOSYS LBS range includes an assortment of heavy duty handles

- Door interlocked in the ON position.
- Possibility to defeat the door interlock with the use of a tool.
- Padlockable in the OFF position; padlocking engages door interlock.
- High degree of protection: up to IP65 IEC and 4, 4X UL.
- UV rated according to UL50.

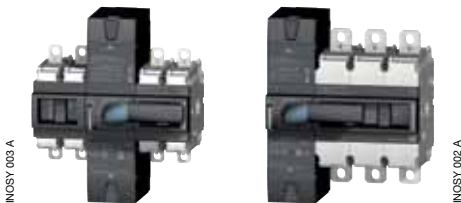


## Ease of installation

> Flexible configuration, wiring and installation to suit every application

### Installation

- **Easy integration:** the mechanism can be centred or left aligned to accommodate the specific requirements of the installation's configuration.
- **Wiring:** the complete **non polarization** of the switch allows all possible types of wiring and connection.



- Back plate mounting: between poles or through use of the adjustable fixing pads.



### Connection

- **Free access to terminals** for flexible wiring.



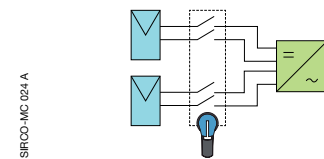
- **Easy access** without tools to integrate auxiliary contacts and tripping coil (both located within the switch footprint).

- **Simplified fastening** with captive nuts, enabling one-handed connection to the power terminals.



### Multi-circuit

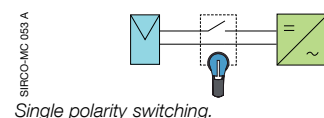
- Disconnection of up to three circuits with one switch (compact and cost effective solution).



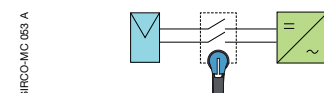
2 MPPT circuits switched together.

### Single or dual polarity switching

- The same switch can be used for installation with either grounded or floating networks by choosing the wiring configuration.



Single polarity switching.



Dual polarity switching.

# Selection guide

Which standard ?

How many circuits ?

Which voltage ?

Which function ?

Which rating ?

IEC 60947-3		INOSYS LBS IEC 60947-3								
		160 A	250 A	315 A	400 A	630 A	800 A	1000 A	1250 A	
1 circuit	1000 VDC	Frame size	F2			F3				
		With tripping function	84P1 1016	84P1 1025	84P1 1031	84P1 1040	84P1 1063	84P1 1080	84P0 4099	84P0 4119
		Without tripping function	86P1 1016	86P1 1025	86P1 1031	86P1 1040	86P1 1063	86P1 1080	86P0 4099	86P0 4119
	1500 VDC	Frame size	F2			F3				
		With tripping function	84P0 3016	84P0 3025	84P0 3031	84P0 3040	84P0 3063	84P0 3080		
		Without tripping function	86P0 3016	86P0 3025	86P0 3031	86P0 3040	86P0 3063	86P0 3080		
2 circuits	1000 VDC	Frame size	F2			F3				
		With tripping function	84P2 2016	84P2 2025	84P2 2031	84P2 2040	84P2 2063	84P2 2080		
		Without tripping function	86P2 2016	86P2 2025	86P2 2031	86P2 2040	86P2 2063	86P2 2080		
	1500 VDC	Frame size	F2			F3				
		With tripping function	84P0 3016	84P0 3025	84P0 3031	84P0 3040	84P0 3063	84P0 3080		
		Without tripping function	86P0 3016	86P0 3025	86P0 3031	86P0 3040	86P0 3063	86P0 3080		

UL 98B		INOSYS LBS UL 98B					
		100 A	250 A	400 A	500 A	600 A	
1 circuit	1000 VDC	Frame size	F2		F3		
		With tripping function	85P0 2010	85P0 2025	85P0 2040	85P0 2050	85P0 2060
		Without tripping function	87P0 2010	87P0 2025	87P0 2040	87P0 2050	87P0 2060
	1500 VDC	Frame size	F2		F3		
		With tripping function	85P0 3010	85P0 3025	85P0 3040	85P0 3050	85P0 3060
		Without tripping function	87P0 3010	87P0 3025	87P0 3040	87P0 3050	87P0 3060
2 circuits	1000 VDC Center mechanism	Frame size	F2		F3		
		With tripping function	85P2 2010	85P2 2025	85P2 2040	85P2 2050	85P2 2060
		Without tripping function	87P2 2010	87P2 2025	87P2 2040	87P2 2050	87P2 2060
	1000 VDC Left mechanism	Frame size	F2		F3		
		With tripping function	85P0 4010	85P0 4025	85P0 4040	85P0 4050	85P0 4060
		Without tripping function	87P0 4010	87P0 4025	87P0 4040	87P0 4050	87P0 4060

1. With tripping function. 2. Without tripping function.

# Also available

## **RESYS AFD**

### **PV Arc Fault & String Monitoring system**

Defective PV modules and components - as well as faulty cables or connectors - can lead to potentially dangerous arc-faults. Undetected, an arc-fault could result in an electrical fire, causing damage to the PV installation and surrounding property.

#### **The solution**

- Protection of PV systems installed on commercial buildings and on ground mounted plant.
- Permanent string monitoring to detect arc-faults.
- Used with INOSYS LBS, it interrupts the electrical arc by opening the circuit.

#### **The benefits**

- Reliable arc detection immune to electrical disturbances (patented technology).
- No nuisance tripping and false alarms, therefore no service call-outs.
- Compact size for easy integration.
- UL 1699B compliant for both AFD and AFCI.
- String monitoring via standard MODBUS protocol.



## **INOSYS LBS**

### **Load Break Switches incorporating tripping function - for AC applications from 100 to 800 A, up to 1000 VAC**

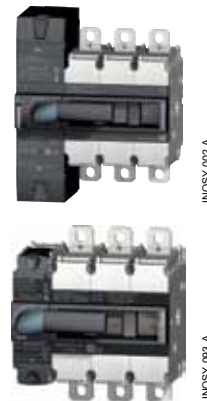
Reliability and guaranteed safety combined with low maintenance costs are vital when selecting components for integration in electrical systems. With its proven switch technology and tripping function, INOSYS LBS can be used for performing safe maintenance in the installation as well as for emergency switching.

#### **The product at a glance**

- Two frames from 100 to 800 A.
- Local manual operation and remote tripping.
- High switching performance for use in all installations, even for high inductive motor loads (AC23 A).
- Robust trip function compatible with emergency switching.
- Shunt-trip coil or under voltage release.
- Visible contact blade indication.

#### **The benefits**

- Safe operation under any circumstances.
- Remote switching for use in all emergency situations.
- Guaranteed disconnection in both OFF & Trip position.
- Compatibility with most of the protection relays (e.g. earth leakage relay, UPS back feed protection).



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