

BROCHURE

# Power switching & monitoring solutions for PV & ESS applications



When **energy** matters

 **socomec**  
Innovative Power Solutions

# We're your **technological partner** for switching & monitoring solutions in energy storage & PV systems

By delivering the most innovative solutions for your precise requirements for 100 years, we ensure the power availability and energy performance of your machine to support your business efficiency in a sustainable way.

## Why partner with us?

### 1 Expert in DC

- 100 years' experience with proven technologies in power switching & monitoring.
- Proceeding from design to final product including conception & assembly.
- In-house laboratory & testing facilities.
- Supporting customers throughout all phases of their projects.

### 2 Customization capacity

As a specialist, mid-sized company, Socomec is able to offer high flexibility to OEMs by:

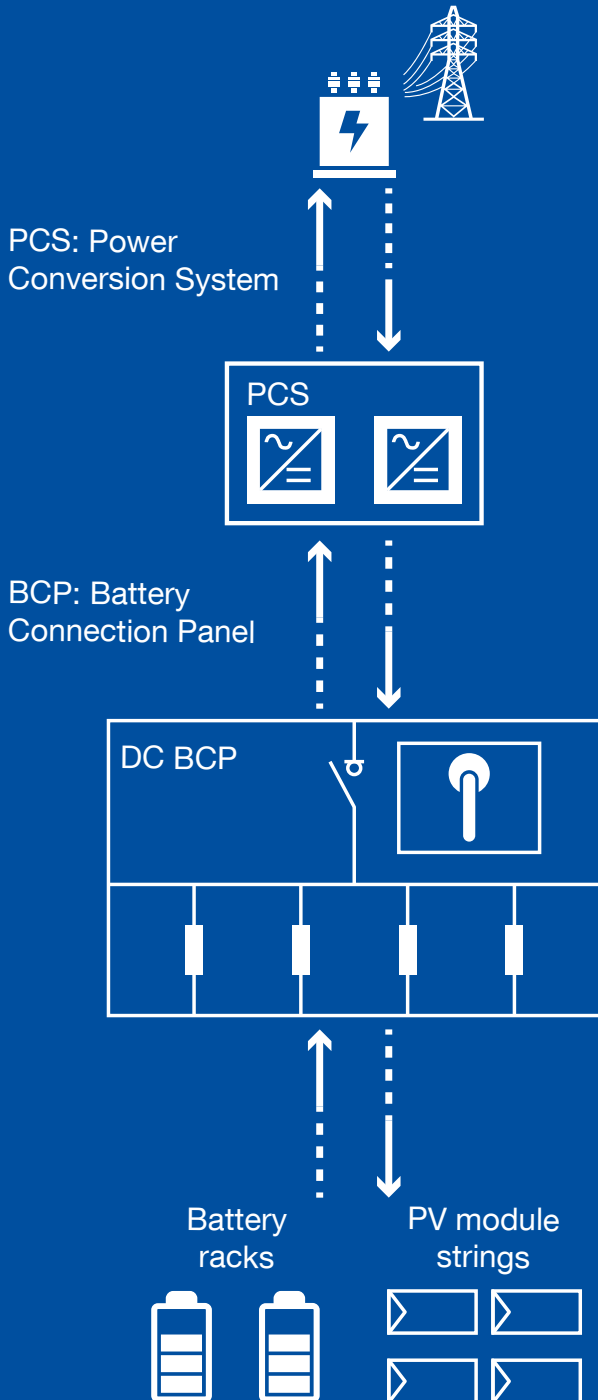
- customizing products to customer and application requirements,
- setting-up a customer-specific supply chain offering.

### 3 Cost management

Because we know that each detail counts, we analyse precisely each feature required in your application to define the product fulfilling your requirements while optimising the cost of your equipment.



# PV & Energy storage application



SCHEM 140

## DC manual switch disconnecter for high performance

1



**INOSYS DC**  
160 to 1600 A,  
up to 1500 VDC

## DC motorised switch disconnecter

2



**SIRCO MOT DC & ESS**  
from 250 to 3600 A,  
up to 1500 VDC

## DC manual switch disconnecter

3



**SIRCO DC**  
from 100 to 3600 A,  
up to 1500 VDC

## AC manual switch disconnecter

4



**SIRCO**  
from 125 to 5000 A,  
up to 1000 VAC

## Multi-circuit Power Monitoring System for both AC and DC systems

5



**DIRIS Digiware**

## Advanced test and simulation capabilities

6



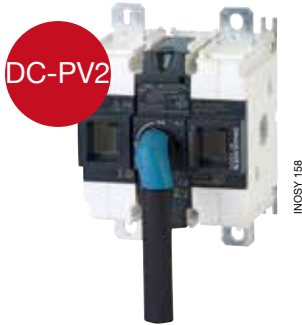
**Tesla Laboratory**

1

# DC manual switch disconnector for high performance

## INOSYS DC & DC ESS

160 to 1600 A, up to 1500 VDC



These switches can be operated manually using the handle to disconnect all or part of the electrical installation. They ensure on-load opening / closing and safe disconnection of any low voltage electrical circuit up to 1500 VDC. They can also be used for emergency power switching applications.

**new** Specific versions for high short circuit capability available.



### Easy to install

- Wiring: the non-polarisation of the switch allows for all types of wiring and connections.
- Integrated auxiliary contacts.



### Safe to use

- Direct position indicator on the bar and visible contact with containment of the electrical arc.
- Completely independent of the operating speed, which ensures safe use under any conditions.
- High temperatures permitted: without derating up to 55 °C (131 °F), operational from -40 to +70 °C.



### Designed for harsh environments

- Vibration-tested (13.2 Hz to 100 Hz at 0.7 G).
- Impact-tested (15 g for three cycles).
- Humidity-tested (2 cycles, 55 °C, 95% humidity).
- Salt spray-tested (3 cycles with storage humidity, 40 °C, 93% humidity after each cycle).

### Innovation

Market's **first true 2 Pole 1500 Vdc** with optimum arc containment and significant power loss reduction, all within a compact device!

IEC 60947-3 - 1500VDC - DC-PV1/2 & DC-21B											
MANUAL	160 A	250 A	315 A	400 A	500 A	630 A	800 A	1000 A	1250 A	1400 A	1600 A
	86P1 1017	86P1 1026	86P1 1032	86P1 1041	86P1 1051	86P1 1064	86P2 2081	86P2 2100	86P2 2125	86P2 2140	86P2 2160
ON - LOAD DC											
ON - LOAD ESS							86E2 2081	86E2 2100	86E2 2125	86E2 2140	86E2 2160

UL 98								
MANUAL	100 A	200 A	400 A	500 A	600 A	800 A	1000 A	1200 A
	87P1 1011	87P1 1021	87P1 1041	87P1 1051	87P1 1061	87P2 2081	87P2 2100	87P2 2120
ON - LOAD DC								
ON - LOAD ESS						87E2 2081	87E2 2100	87E2 2120

# 2 DC motorised switch disconnecter

## SIRCO MOT DC & DC ESS

from 250 to 3200 A, up to 1500 VDC



SIRCO MOT DC & DC ESS are remotely operated multipolar load break switches. They make and break under load conditions and provide safety isolation for any low voltage circuit dedicated to DC applications with high short circuit capabilities up to 1500 VDC.



### Application tested design

- **Designed and tested for several DC applications**, with proven performance in the harshest of environments. The arc extinguishing system provides safe disconnection, rapid arc extinguishing and current Interruption.
- **Tested against high short circuit systems** with and without fuse protection to ensure complete system protection above 250 kA.
- **Proven against severe environmental factors including:** 'Annex Q level C according to IEC 'salt spray tested, high temperature and altitude, humidity cycle tested).







### Reduced total cost of ownership

Developed with cost saving in mind for the user, the product features improvements which ensure lower total cost of ownership:

- flexible wiring configurations,
- multiple circuit design,
- 1 design for both IEC & UL products,
- compact design with reduced footprint & weight.



### Innovation

Market's **first true motorised 2 pole 1500 Vdc** with optimum arc containment and significant power loss reduction, all within a compact device!

IEC IEC 60947-3 - 1500VDC - DC-PV1/2 & DC-21B								
Motorised	250 A 19PV3026	400 A 19PV 3041	630 A 19PV 4064	1000 A 19PV 6101	1600 A 18DC 4250	2500 A 18DC 4250	3200 A 18DC 4320	3600 A 18DC 4360
ON - LOAD DC								
ON - LOAD ESS					18ES 4250	18ES 4250	18ES 4320	18ES 4360
								



Consult us

Motorised	2000 A 18DC 4200		2000 A 18ES 4200
ON - LOAD DC		ON - LOAD ESS	



# 3 DC manual switch disconnecter

## SIRCO DC & DC ESS

from 100 to 3600 A, up to 1500 VDC



SIRCO DC & DC ESS are manually operated load break switches. Making and breaking capacity under load conditions up to 1500 VDC. These extremely durable switches have been tested and approved for use in the most demanding applications. They have been designed and tested for all types of DC applications.

**new** Specific versions for high short circuit capability available.



### Reliability and performance

Our range of SIRCO DC load break switches is compliant to standards UL98B and IEC 60947-3.

SIRCO DC have been tested to critical currents and high short-circuit currents during 50 ms without specific protection.



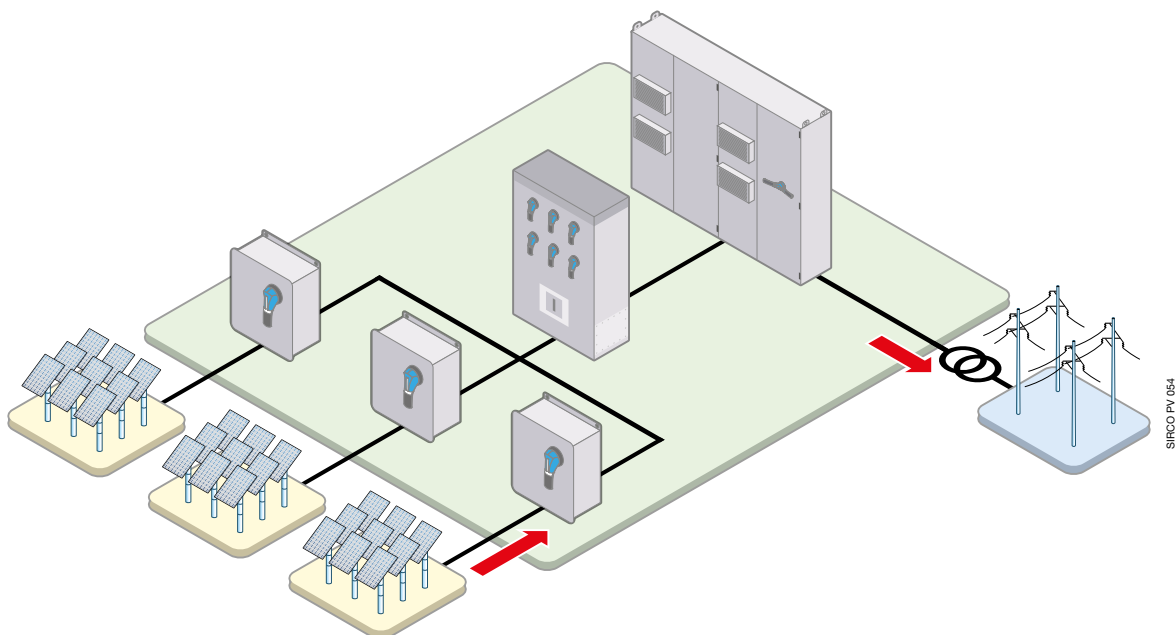
### Innovative design

The SIRCO DC can be directly connected to up to four independent DC circuits. The global solution cost is therefore reduced in comparison with the use of four distinct switches.



### High quality materials

SIRCO DC is an extremely robust device in a glass fibre reinforced polyester frame.

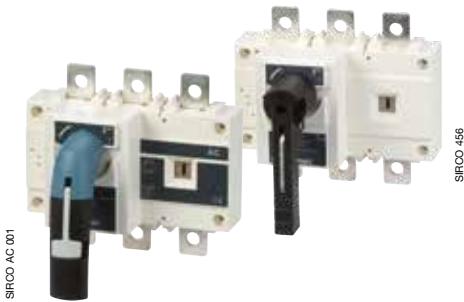


SIRCO PV 054

# AC manual switch disconnecter

## SIRCO

from 125 to 5000 A, up to 1000 VAC



SIRCO LBS is a manually or remotely operated multipolar load break switch. They make and break under load conditions and provide safe isolation. SIRCO is designed for heavy duty applications up to 1000 VAC - AC 23.



### Simplicity

The standardisation of the SIRCO range and its wide choice of common accessories enable:

- simple mounting,
- reduced stock management and storage costs.



### Easy to install

The outdoors ranges are easy to install thanks to:

- a good centre-to-centre distance (up to 120 mm),
- connection up to 6 x 185 mm<sup>2</sup>,
- connection accessories which facilitate both flat and edgewise connections.



### High quality materials

SIRCO is an extremely robust device in a glass fibre reinforced polyester frame.



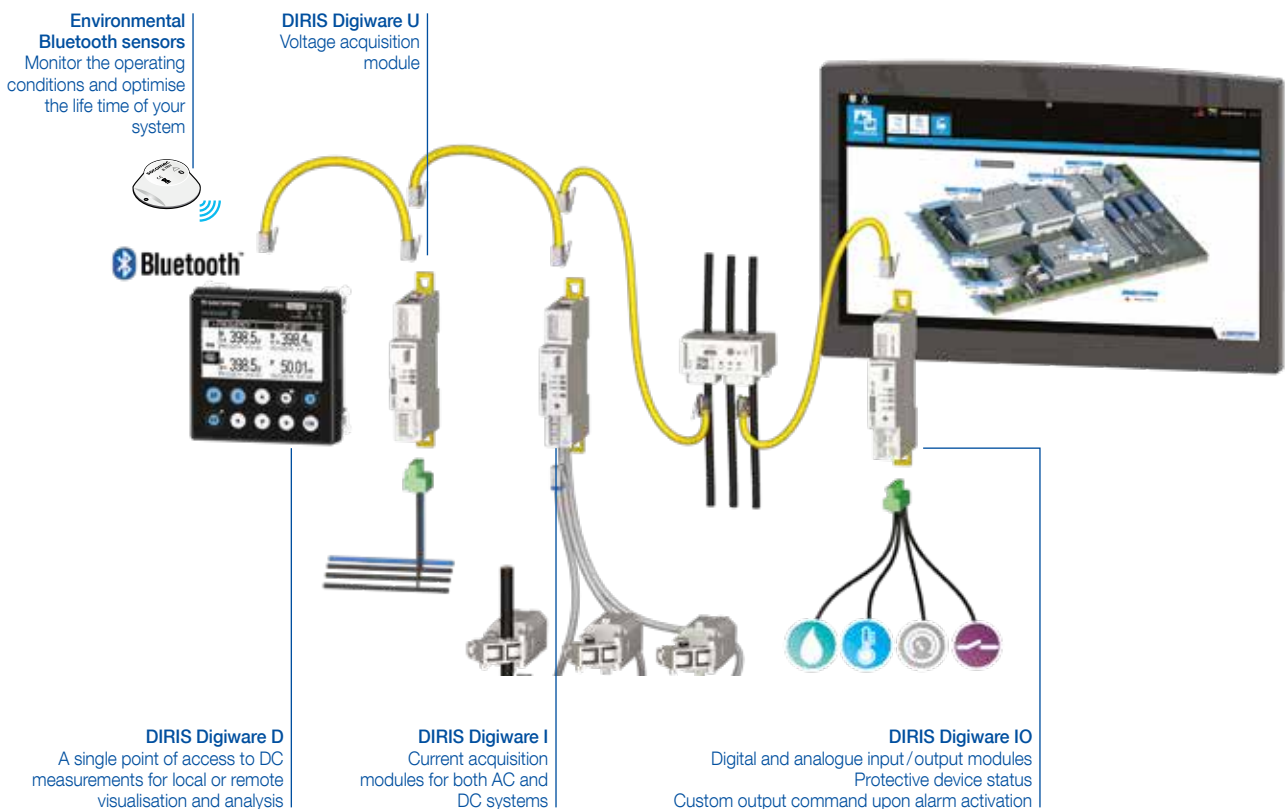
# Multi-circuit Power Monitoring System for both AC and DC systems

## DIRIS Digiware DC & AC

The DIRIS Digiware system is a hub of technological innovations that has revolutionised the world of power monitoring - bringing a high degree of flexibility to installations and making connection and configuration easier than ever before.

A complete Socomec solution, DIRIS Digiware delivers unrivalled performance in terms of accuracy and functionality – whilst being tailored to your system architecture.

The most effective solution for monitoring for both AC and DC systems – and that's proven.



### Compact

- Multi-circuit approach thanks to a modular concept made of compact elements.
- One unique interface for both AC and DC circuits.



### Versatile

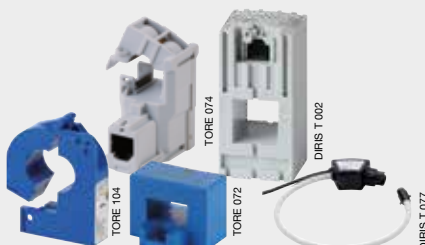
- High-end monitoring with rich measurements
- One system allowing to fully monitor your AC and DC circuits.



### Flexible

100% customisable to your system architecture: number and type of circuits, voltage level etc.

## Also available



### AC and DC current sensors

A wide range of solid-core, split-core and flexible current sensors is available to meet any integration requirements from 5 to 6000 A.

Their RJ12 connection to the current acquisition modules and their colour-coded connectors make integration quick and without wiring errors.



# Advanced test and simulation capabilities

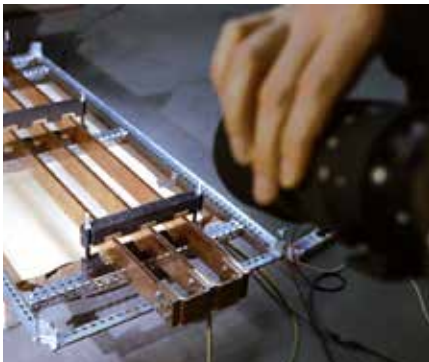
Validation of the selection of fuse and switch combination is essential to prevent catastrophic faults and limit damage to people, property and payback!

## TESLA LAB

Your passport to worldwide commercialisation



**Tesla Power Lab** is an independent laboratory specialising in power testing for components and electrical equipment, low-voltage switchgear and switchgear assemblies. Tesla Power Lab provides a wide range of equipment and experience in electrical, mechanical, climatic and functional testing.



Short circuit tests



Verification of temperature rise



Overload of endurance tests

Several supplementary tests can be carried out in order to fulfill standards requirements.

## Short circuit simulation software



SOFT 158

Dedicated software to determine that the switch can withstand the short circuit current. The customer provides their battery characteristics and fuse choices. Socomec recommends a switch for their application.

## Figures

- 2,250 m<sup>2</sup> surface area
- 4 M€ invested since 2011
- 40 experts
- 50 years' experience.

# Socomec: our innovations supporting your energy performance

**1** independent manufacturer

**3,900** employees worldwide

**8** % of sales revenue dedicated to R&D

**400** experts dedicated to service provision

## Your power management expert



POWER SWITCHING



POWER MONITORING



POWER CONVERSION



ENERGY STORAGE



EXPERT SERVICES

## The specialist for critical applications

- Control, command of LV facilities
- Safety of persons and assets
- Measurement of electrical parameters
- Energy management
- Energy quality
- Energy availability
- Energy storage
- Prevention and repairs
- Measurement and analysis
- Optimisation
- Consultancy, commissioning and training

## A worldwide presence

**12** production sites

- France (x3)
- Italy (x2)
- Tunisia
- India
- China (x2)
- USA (x2)
- Canada

**30** subsidiaries and commercial locations

- Algeria • Australia • Austria • Belgium • China
- Canada • Dubai (United Arab Emirates) • France
- Germany • India • Indonesia • Italy • Ivory Coast
- Netherlands • Poland • Portugal • Romania • Serbia
- Singapore • Slovenia • South Africa • Spain • Sweden
- Switzerland • Thailand • Tunisia • Turkey • UK • USA

**80** countries

where our brand is distributed

### HEAD OFFICE

#### SOCOMECC GROUP

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**100** years  
OF SHARED ENERGY

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Innovative Power Solutions