

# Solution for the continuity and availability of the power supply in group 2 medical location *MEDSYS*



When **energy** matters



# Ensure patient safety and power availability

IEC 60364-7-710 standard defines places in medical location in terms of electrical risks according to 3 groups:

## Group 0



Medical location where no applied parts are intended to be used.

## Group 1



Medical location where applied parts are intended to be used as follows:

- externally,
- invasively to any part of the body, except where group 2 applies.

## Group 2



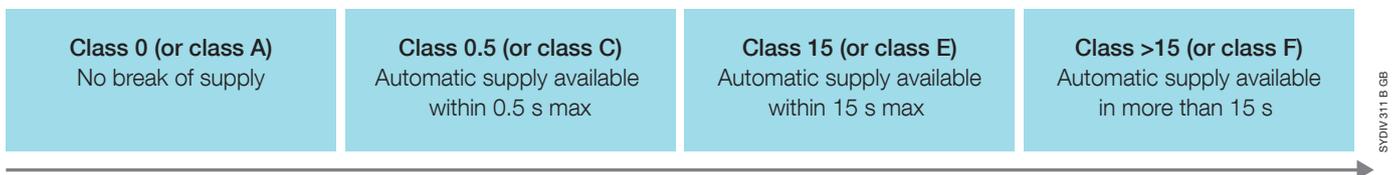
Medical location where applied parts are intended to be used in applications such as intracardiac procedures, operating theatres and vital treatment where discontinuity (failure) of the supply can cause danger to life.

### What is an applied part?

Standard IEC 60364-7-710 defines medical equipment or an applied part which in normal use:

- necessarily comes into physical contact with the patient for the equipment to perform its function,
- can be brought into contact with the patient,
- needs to be touched by the patient.

Moreover, IEC 60364-7-710 standard defines exactly the needs in term of service continuity of the power supply depending on the kind of care.



# The ultimate Socomec solution for medical location

When the availability of the electrical power supply is vital to ensure continuity of patient care, choosing the right solution really counts.



The only manufacturer's solution that is IEC 61439 certified

## Why choose the Socomec solution Socomec?

Socomec has equipped the Strasbourg University Hospitals (HUS) with 39 hospital bays. They are responsible for ensuring the continuity of power supply to the operating theatres for 2711 patients.



We chose MEDSYS bays because they:

- ensure protection via an insulation monitoring device,
- comply with NFC 15-211, which specifies the methods for the design, implementation and operation of LV power supplies in health care facilities.

MEDSYS cabinets also met our needs because they include the following characteristics:

- compact size,
- easy and intuitive operation,
- operator safety,
- manual emergency operation,
- current and energy monitoring function.

The Socomec staff were attentive to my operating requirements and understood them. The good relationship and the ability to listen enabled Socomec to offer hospital bays that meet the technical and financial needs of the project.

**THIERRY OSWALD**  
Operational Electrical Engineer



# MEDSYS range

MEDSYS range complies with all class level for group 0, 1 and 2 as define in IEC 60364-7-710 standard.

## Basic configuration MEDSYS 20

Including all necessary components to protect people against direct and indirect contact. **Supplied by UPS or raw mains.**



## Intermediate configuration MEDSYS 30 CD & MEDSYS 30 Slim

Including all necessary components to protect people against direct and indirect contact. **Supplied by 2 normal/ safety incomers.**



## Complete configuration MEDSYS 40 CD

including all necessary components to protect people against direct and indirect contact. **Supplied by 2 UPS incomers.**



## Complete configuration MEDSYS 60

Including all necessary components to protect people against direct and indirect contact. **Supplied by one or by 2 normal/safety incomers.**



## Power availability

- Operation continuity even in case of 1st fault.
- Insulation fault identification in less than 10 s even in presence of highly disturbed receivers.
- Power availability is guaranteed by Static Transfer Switch and/or Uninterruptible Power Supply.

## Easy implementation

- The enclosure has a hinged covers door allowing quick access to functional devices.
- Visual identification of the differents compartments.

## Complete range

- Four versions and eight configurations.
- Adaptation of the solution in function of operating constraints and architectural typology of medical location group 2.
- Insulation fault location and surge protection are available for all configurations.

## Guaranted Safety

- Safety of people against indirect contacts (IT scheme, insulation) and against directs contacts (IP21, segregation).
- Integration of all indication contacts of devices to provide informations to a BMS.

## Easy maintenance

- All the terminals are located in dedicated compartment.
- Some critical components (transformers, uninterruptible power supply, static transfer switch) can be taken out.

## Technological performance

- Predictive maintenance for your entire IT unearthed system (OhmScanner technology included in ISOM Digiware).

## IOT ready

- Embedded web technology.
- Remote control/consultation.
- Alarm control and data analytics.
- Temperature, humidity and door opening sensors.

# Selection guide

Four versions and eight configurations are available to allow you to find the perfect solution adapted to your application.

	MEDSYS 20		MEDSYS 30 CD	MEDSYS 30 SLIM	MEDSYS 40 CD		MEDSYS 60		
	A	B	A	A	A	B	A	B	C
<b>Incomers</b>									
1 incomer from UPS/ normal	•	•							
1 UPS incomer and 1 safety incomer			•	•					
2 UPS incomers					•	•			
1 normal incomer							•		
2 normal/safety incomers								•	•
<b>Insulation transformer</b>									
Power (kVA)	4	6.3	10	10	10	2 x 5	10	10	2 x 10
Covered (stand-alone)	•	•							
Integrated			•	•	•	•	•	•	•
<b>Incomer Switching Type</b>									
Tripping Load break switch	•	•					•		
Static transfer switch STATYS					•	•			
Automatic transfer switch ATyS M			•	•				•	•
<b>Integrated UPS</b>									
Uninterruptible power supply (UPS) MODULYS or NETYS RT							•	•	•
<b>Distribution</b>									
TN-S		•	•	•	•	•	•	•	•
IT-M (ISOM K-40h)	•	•	•	•	•	•	•	•	•
<b>Remote Alarm Panel</b>									
Alarm visualisation ISOM D-15h	•	•	•	•	•	•	•	•	•
<b>Options</b>									
Surge protection device (SURGYS D40)	•	•	•	•	•	•	•	•	•
Earth fault location device ISOM Digiware	Consult us	Consult us	•	•	•	•	•	•	•
<b>Dimensions</b>									
H x W x D (mm)	630 x 403 x 129		1800 x 400 x 400	1800 x 600 x 220	2000 x 600 x 370		2200 x 800 x 800		

D = Excluding 20mm fixing

## Service offering

To ensure optimal operation of your MEDSYS, Socomec offers expert services such as commissioning, earth fault detection and training.

### Maintenance contracts

Description of services	SILVER	GOLD	PLATINUM
Annual preventive maintenance visit	•	•	•
Labour and travel for corrective maintenance		•	•
Original spare parts			•
Hotline availability during working hours	•	•	•
Emergency hotline 24/7*	o	o	o
Response Time to Site within next working day	•	•	•
Response Time to Site within 6 hours*	o	o	o
Response Time to Site within 4 hours*	o	o	o
Additional preventive maintenance visit	o	o	o
Out of hours preventive maintenance visit during night, weekend & bank holidays	o	o	o
Thermographic control	o	o	o

\* Please check the availability of this service in your area.

•: Included.

o: Option.



Service continuity



On-site intervention



Hotline



Get a preferential rate by subscribing to a maintenance contract within the first 6 months after the installation of your MEDSYS equipment.

# Scalable configuration to suit your needs

IEC 60364-7-710 standard requires an IT medical earthing scheme for group 2 locations and at least one transformer per operating theater or per medical room concerned.

## Transformer for IT medical scheme

Socomec oil-free TRM transformers are LV/LV transformers which separate the general distribution network from the medical room power supply provided by the IT scheme. As such, they can isolate and compartmentalise the electrical disturbances across the entire installation.



TRMFO 008

AND

## Insulation monitoring device and alarm visual/control panel

The Insulation Monitoring Device ISOM K-40h is a combined device for monitoring:

- insulation level of the medical IT scheme,
- load current of single-phase transformer, for medical IT scheme (up to 50 A),
- temperature of the medical IT transformers.

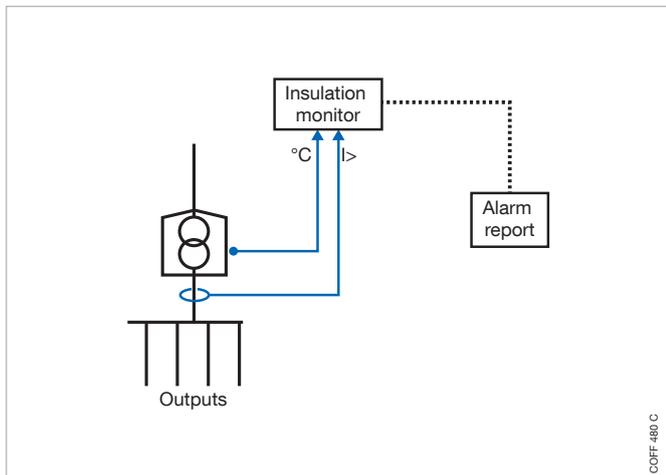
The D-15h alarm report displays a summary of the alarms related to insulation monitoring, overheating and overloading of the medical IT transformer monitored by the ISOM K-40h IMD.



ISOM 486



ISOM 484



COFF 480 C

IEC 60364-7-710 standard recommends that group 2 medical location are supplied by 2 separated sources.

## Automatic transfer switch (ATS)

ATyS M are automatic transfer switches ensuring automatic switching to a main power supply. They have been developed, tested and approved according to criteria defined by the international product standards IEC 60947-3 and IEC 60947-6-1.



ATyS GM 001

OR

## Static transfer switch (STS)

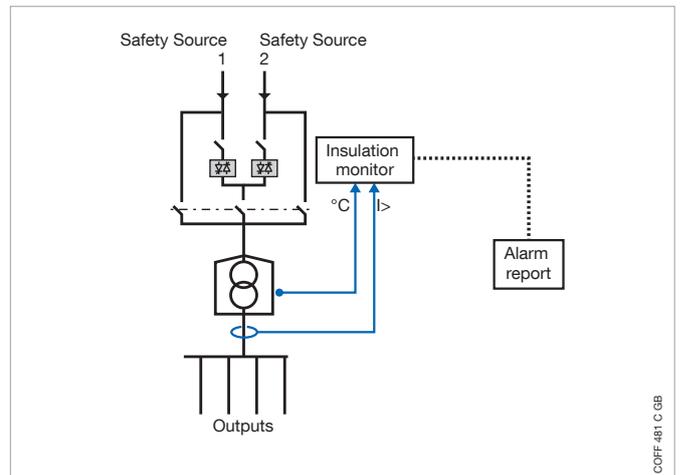
Static transfer switches ensure a power supply redundancy between two independent sources while delivering continuous service to critical applications by choosing the best power supply quality. Loads are transferred without interruption in accordance with IEC 62310.



STAYT 018



STAYT 044



COFF 481 C GB

IEC 60364-7-710 standard also requires that group 2 medical location are powered without interruption.

Document HD 60364-7-7-710 and standard NFC 15211 recommend the use of fault location.

### Uninterruptible Power Supply (UPS)

NETYS RT Uninterruptible Power Supplies (UPSs) ensure continuity of power. Double conversion technology ensures the ultimate protection for loads. The rack design meets all needs to extend power and/or redundancy.



GAMME B54

### Insulation and power monitoring

ISOM Digiware is a 2 in 1 system combining insulation monitoring and power monitoring for IT unearthed system installations. This interconnected system is designed to immediately and accurately detect and locate an insulation fault. It guarantees continuity of service even in the event of a first insulation fault, thus ensuring the safety of people and goods.

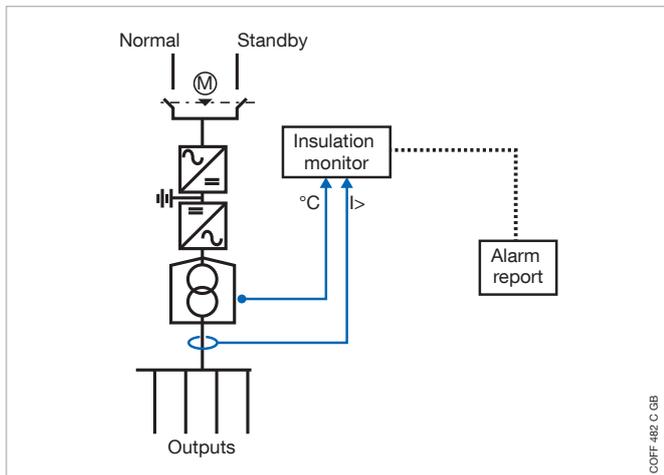


GAMME 723 A

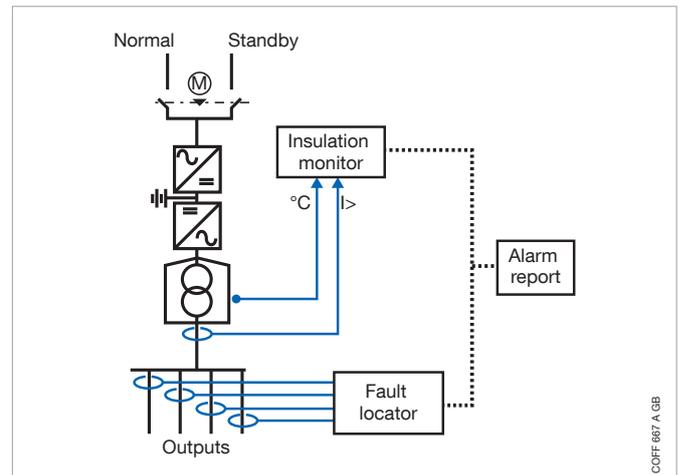


### OhmScanner technology

OhmScanner technology will detect an insulation fault before it occurs. Thanks to a detailed mapping of the insulation of each circuit, the user can carry out predictive maintenance (available with the ISOM Digiware system).



COFF 482 C GB

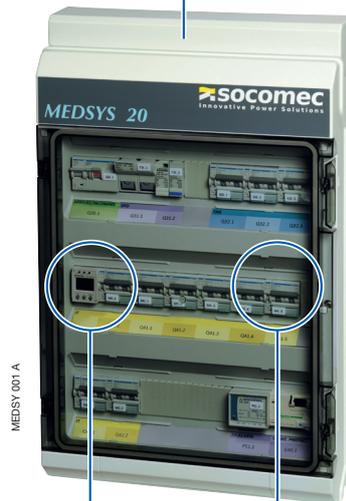


COFF 687 A GB

# Basic configuration *MEDSYS 20*

## Modular enclosure

- Physical separation between each area.
- Screwed faceplates.



Covered transformer from 4 to 6.3 kVA.

## Insulation monitoring device

- All IT outgoing ways are monitored by an insulation monitoring device type ISOM K-40h.



## IT and TN-S outgoing ways

- Modular circuit-breaker with magnetothermal tripping.
- Circuit-breaker equipped with positive safety contact for the detection of electrical fault.

## Technical features

### Incomer rating

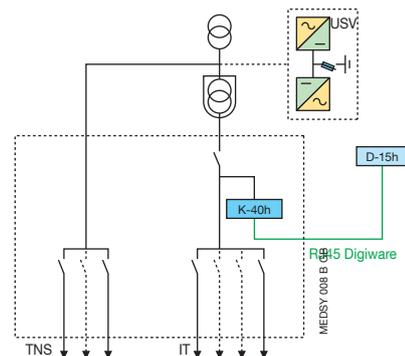
Rating configuration A	Rating configuration B
63 A	63 A

### Number of outgoing ways with curve C circuit breakers

Configuration A		Configuration B	
IT	TNS	IT	TNS
2 x 10 A + 3 x 16 A	-	3 x 10 A + 4 x 16 A	1 x 10 A + 2 x 16 A

### Covered transformer IP21

Power(kVA)	H (mm)	W (mm)	D (mm)
4/6,3	530	500	460



One-line diagram MEDSYS 20 in configuration B.

# Intermediate configuration

## MEDSYS 30 CD & MEDSYS 30 SLIM

### Incoming supply

- Automatic transfer switch (ATyS M) for 2 normal/safety incomers.



MEDSY 035

### IT and TN-S outgoing ways

- Modular circuit-breaker with magnetothermal tripping.
- Circuit-breaker equipped with positive safety contact for the detection of electrical fault.
- All IT outgoing ways are monitored by an insulation monitoring device ISOM K-40h or ISOM Digiware system (optional).



MEDSY 030



MEDSY 020

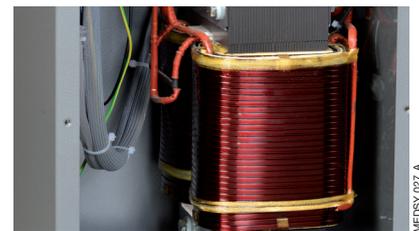
MEDSY 045

### Modular cabinet

- Physical separation between each area.
- Rotative and reversible door.
- Transformer can be taken out.

### Insulation transformer

- Insulation transformer for IT earth system compliant to standard IEC 61558-2-15.
- Integrated digital temperature sensor.
- Configuration comprising one transformer 10 kVA.



MEDSY 027 A

### Technical features

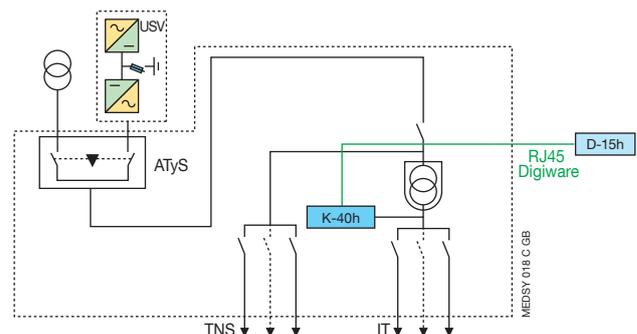
#### Incomer rating

Incomer type	rating
1 UPS and normal incomer: ATyS M	63 A

#### Number of outgoing ways with curve C circuit breakers

TNS	IT (configuration A)
1 x 10 A + 2 x 16 A	8 x 10 A + 10 x 16 A

The locating unit is not included. If you would like to add this option, please get in touch.



Single Line diagram MEDSYS 30 CD.

MEDSY 018 C GB

# Complete configuration **MEDSYS 40 CD**

## IT and TN-S outgoing ways

- Modular circuit-breaker with magnetothermal tripping.
- Circuit-breaker equipped with positive safety contact for the detection of electrical fault.
- All IT outgoing ways are monitored by an insulation monitoring device ISOM K-40h or ISOM Digiware system (optional).



## Incoming supplies

- Static transfer switch (STATYS) for 2 UPS incomers.



## Modular cabinet

- Physical separation between each area.
- Rotative and reversible door.
- Separation of low and high currents.
- Electrical distribution by distribution block.
- Dedicated and integrated cable compartment.

## Insulation transformer

- Insulation transformer for IT earth compliant to standard IEC 61558-2-15.
- Integrated digital temperature sensor.
- Configuration A composed with one transformer 10 kVA; Configuration B composed with two transformers 5 kVA.



## Technical features

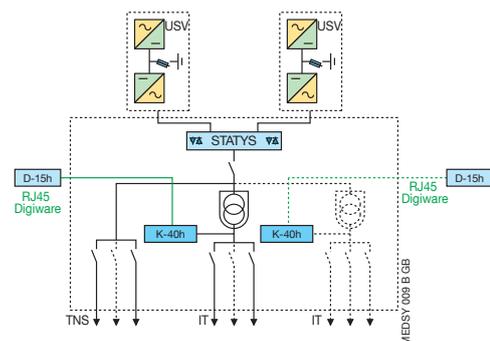
### Incomer rating

Supply type	Rating
2 arrivées ondulées : STATYS	63 A

### Number of outgoing ways with curve C circuit-breaker

TNS	IT (configuration A)	IT (configuration B)
1 x 10 A + 2 x 16 A	10 x 10 A + 14 x 16 A	5 X 10 A + 7 X 16 A per transformer

The locating unit is not included. If you would like to add this option, please get in touch.



One-line diagram MEDSYS 40 CD.

# Complete configuration **MEDSYS 60**

## IT and TN-S outgoing ways

- Modular circuit-breaker with magnetothermal tripping.
- Circuit-breaker equipped with positive safety contact for the detection of electrical fault.
- All IT outgoing are monitored by an insulation monitoring device ISOM K-40h ISOM Digiware system (optional).



MEDSY 035

## Insulation transformer

- Insulation transformer for IT earth compliant to standard IEC 61558-2-15.
- Integrated digital temperature sensor
- Configuration A and B composed with one transformer 10 kVA; Configuration C composed with two transformers 10 kVA.
- Transformers can be taken out.



MEDSY 027



MEDSY 022

## Modular cabinet

- Physical separation between each area.
- Rotative and reversible door.
- Separation of low and high currents.
- Electrical distribution by distribution block.
- Transformers and UPS can be taken out.

## Tripping Load Break Switch or Automatic Transfer Switch

- Configuration A : Tripping load break switch for 1 normal incoomer.
- Configuration B and C : Automatic transfer switch (ATyS M) for 2 normal/safety incomers.



MEDSY 031

## Uninterruptible Power Supply

- Possibility to add power modules on load without interruption of the power supply.
- UPS compartment can be taken out.



MEDSY 022

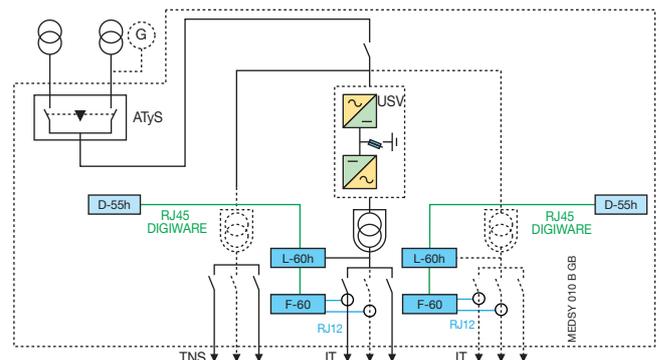
## Technical features

### Incomer rating

Type d'arrivée	Rating
1 normal or UPS incomer: tripping load break switch	63 A
2 normal/safety incomers: ATyS M	100 A

### Number of outgoing ways with curve C circuit-breaker

TNS	IT (configurations A and B)	IT (configuration C)
1 x 10 A + 2 x 16 A	7 x 10 A + 12 x 16 A	14 x 10 A + 18 x 16 A



One-line diagram MEDSYS 60 in configuration B or C.

# Socomec: our innovations supporting your energy performance

**1** independent manufacturer      **4,200** employees worldwide      **8** % of sales revenue dedicated to R&D      **400** experts dedicated to service provision

## Your power management expert



## The specialist for critical applications

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- Safety of persons and assets
- Measurement of electrical parameters
- Energy management
- Energy quality
- Energy availability
- Energy storage
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- Measurement and analysis
- Optimisation
- Consultancy, commissioning and training

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**80** countries

where our brand is distributed

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