

ASYS

16 A Transfer System



INTENDED USE

The ASYS TRANSFER SWITCH device is used as a power source selector providing a redundant power supply to the load.

It runs on a single phase network. The device is compliant with all relevant safety regulations concerning information technology equipment, including electronic equipment for use in an office environment.

WARNING

This document provides important instructions for a safe installation, operation and use of the ASYS.

It is advised that this User Manual be consulted before installation of the equipment, which operation should only be performed by skilled personnel.

DEVICE OVERVIEW

The ASYS is available in two voltage levels, 120 Vac and 220/230/240 Vac. The nominal current 16A is available for both voltage levels.



Please strictly follow the procedures when switching the ASYS ON or OFF. In all circumstances all repairs must only be executed by authorized and skilled personnel.

This equipment complies with the European Community directives for professional equipment. Hence it is labelled as follows: .

TABLE OF CONTENTS

1. CERTIFICATE AND CONDITIONS OF WARRANTY	2
2. SAFETY	3
2.1. IMPORTANT	3
2.2. EMERGENCY	3
2.3. PACKAGING	4
2.4. WARNING	4
3. OVERVIEW	5
3.1. PURPOSE OF ASYS TRANSFER SWITCH	5
4. UNPACKING AND INSTALLATION	5
4.1. DELIVERY AND STORAGE	5
4.2. INVENTORY LIST	5
4.3. STORAGE	6
4.4. HANDLING	6
4.5. ENVIRONMENTAL CONDITIONS	6
4.6. RACK MOUNTING	6
4.7. ENVIRONMENTAL REQUISITES	7
5. PRESENTATION	7
5.1. FRONT PANEL	7
5.2. REAR PANEL	7
5.3. OPERATING PANEL	8
5.4. FEATURES	8
6. OPERATING PROCEDURES	9
6.1. MANUAL SWITCH ON PROCEDURES	10
7. TECHNICAL DATA	11
7.1. INPUT/ OUTPUT FEATURES	11
7.2. CONNECTION	11
7.3. COMMUNICATIONS	12
7.4. MECHANICAL FEATURES	12
7.5. ENVIRONMENT	12
7.6. SAFETY STANDARDS	13
7.7. EMC STANDARD	13
7.8. OVERCURRENT	13
7.9. EXTERNAL PROTECTION AND ISOLATION DEVICES	14
8. TROUBLESHOOTING	15

1. CERTIFICATE AND CONDITIONS OF WARRANTY

The warranty conditions are stipulated in the sales contract. If not the following points shall apply:

SOCOMECS's guarantee is strictly limited to the product(s) and does apply neither to the equipment in which they could be integrated nor to the performance of such equipment.

The manufacturer, at his discretion, is entitled to adapt his product in order to comply with the warranty or replace the faulty parts. The manufacturer's warranty does not apply in the following cases:

- Defects arising either from designs or parts imposed or supplied by the Purchaser,
- Failure due to fortuitous circumstances or force majeure,
- Replacements or repairs resulting from normal wear of units and machinery,
- Repair, modification, regulation or replacement of parts made by a third party or personnel not qualified without SOCOMECS's written consent.

The period of validity of the warranty may never exceed 12 months after delivery.

Replacements, repairs or modifications of parts during the warranty period cannot extend the duration of the warranty.

For these stipulations to be valid, the Purchaser must, within a maximum of 8 days after the warranty lapses, expressly inform the Manufacturer of the faulty design, or the material or manufacturing defect, stating in detail the grounds for his complaint.

Defective parts replaced free of charge by the Manufacturer are to be put at his disposal, so that he may become the sole owner.

The warranty legally ceases if the Purchaser has, of his own initiative, undertaken modifications or repairs on the Manufacturer's products without the written consent of the latter.

The Manufacturer's liability is limited to the obligations as defined herein (repair or replacement), all other items of damage being formally excluded.

The Purchaser is liable for taxes or duties of any kind in compliance with either the European regulations, or those of the country of import or transit.

2. SAFETY

2.1. IMPORTANT

Read the following safety notices carefully! Failure to observe the instructions may endanger your life, your health, the reliability of your device or the security of your data.

- Transport the unit only in its original packaging.
- If the equipment is stored in a cold environment prior to installation, condensation may occur. Before you switch on the equipment it must be absolutely dry.
- The equipment must be installed in accordance with the environment conditions specified as follows: Operating temperature: 0 to 40°C, Operation humidity: 20% to 85% (no condensing).
- Lay all cables so that nobody can stand on them or trip over them.
- For pluggable equipment, the socket-outlet shall be installed near the equipment and shall be easily accessible. The plug on the power supply cord is intended to serve as the disconnecting device.
- Make sure that no objects get inside the device.
- The sum of the ASYS leakage currents does not exceed 3.5mA.
- Earth connection must be done prior to any connection to the power supply.
- Data transmission lines should NOT be connected or disconnected during a thunderstorm.



Do NOT connect equipment that will overload the ASYS.

2.2. EMERGENCY

The supply to the load may be interrupted by opening both input power supply.

DO NOT use WATER to extinguish any fire that may occur in the area in which the ASYS is installed.

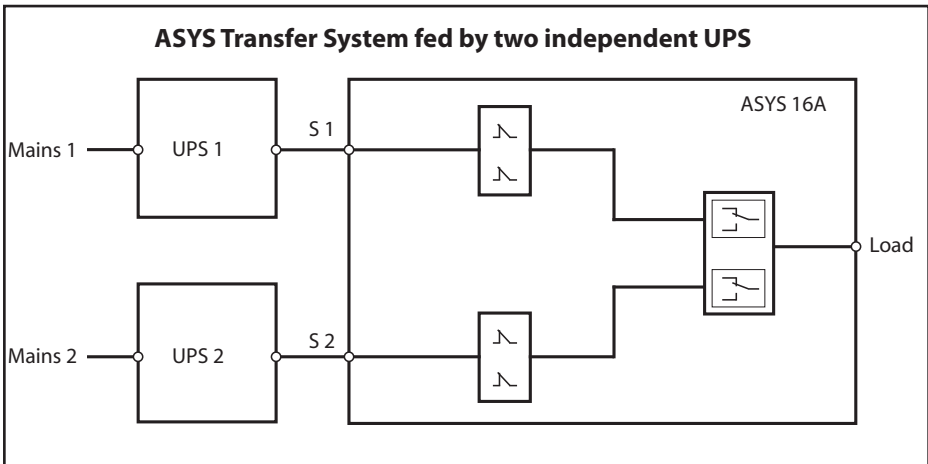
2.3. PACKAGING



All packaging material must be recycled in compliance with the laws in force in the country where the system is installed.

2.4. WARNING

- It is absolutely necessary to earth the ASYS before connecting any upstream and downstream supplies.
- The Installation of the ASYS may only be carried out by qualified technical personnel.
- Even if the ASYS output has been switched off, hazardous voltages are present within the ASYS; any operation that requires the unit to be opened and/or removed may be carried out by authorized technical personnel only.
- Do not remove the cover without completely disconnecting the ASYS from the input supplies 1 and 2.
- User or Operator can intervene in ASYS on condition that the instructions of connection presented below are respected.



3. OVERVIEW

3.1. PURPOSE OF ASYS TRANSFER SWITCH

The 2-pole ASYS is a two-way, single phase automatic switch powered by two independent synchronous or asynchronous AC power supply sources.

ASYS provides redundant power, it makes a rapid switch from one source to the other in the event of a fault to the power supply used to power the load.

One of the two sources can be designated as the preferred power supply, to which the ASYS will supply the load. It remains there until different designations or faults require it to be switched to the alternate source.

The ASYS is fitted with a block diagram with LED indicators, capable of providing all information concerning equipment operation status, together with the power source priority selection which enables trained operators to make full use of the apparatus.

4. UNPACKING AND INSTALLATION

4.1. DELIVERY AND STORAGE

The goods have been checked thoroughly before dispatch. On receipt, check the packaging and ensure that the contents are undamaged. Any damage or missing parts must be reported to the supplier as soon as possible.

ASYS is available in 2 models (see chapter 7 for characteristics): ASYS16 -120
ASYS16 - 230

4.2. INVENTORY LIST

- ASYS module
- 2 pluggable input power cable (for ASYS16 - 230 model only)
- Screw sets (4 screw and 4 cage nuts)
- 2 bracket kits for rack mounting
- 2 bracket kits for vertical mounting
- User Manual

NOTE: An approved power cable greater or equal to H05VV-F, 3G, 0.7mm² must be used.

4.3. STORAGE

Storage temperature: -25 to 70°C,
Storage humidity: from 10% to 90%.

4.4. HANDLING

The equipment must be handled with care. Damage may be caused if dropped or subjected to severe impacts.

4.5. ENVIRONMENTAL CONDITIONS

The ASYS TRANSFER SWITCH must be installed as rack mount or on a flat horizontal surface and in an area protected from temperature extremes, water and humidity and the presence of conductive powder or dust.



DO NOT stack units and do not place any objects on top of a unit.

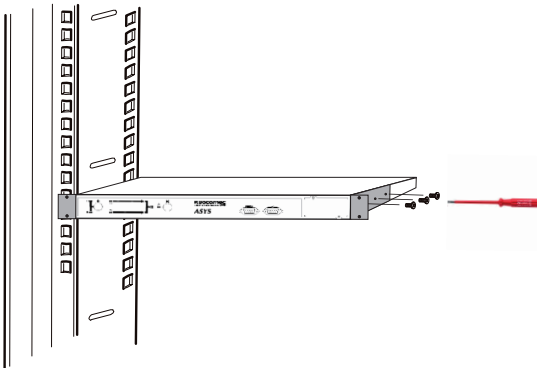
4.6. RACK MOUNTING

Taking into consideration that the ASYS is mounted into a cabinet, it is necessary that the cabinet to be capable of supporting the unit with corresponding rails or angles.

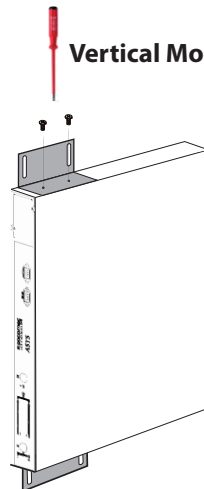
ASYS scope of supply contains two angles for fixing the ASYS into a 19 inch rack or into a cabinet with 19 inch inner design.

Option: Also ASYS vertical mounting is possible.

Rack Mounting



Vertical Mounting



4.7. ENVIRONMENTAL REQUISITES

It is necessary to leave a minimum space of a few centimetres around right side, left side and rear side to allow a flow of air and to provide access to the interface.

5. PRESENTATION

5.1. FRONT PANEL

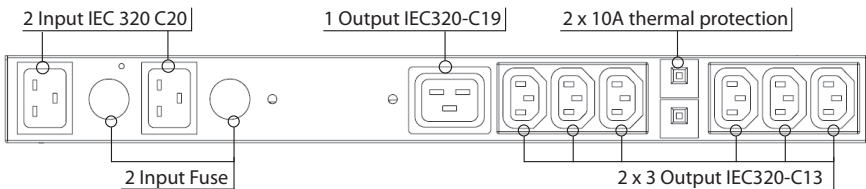
The front of the ASYS TRANSFER SWITCH with its LED display and interfaces:



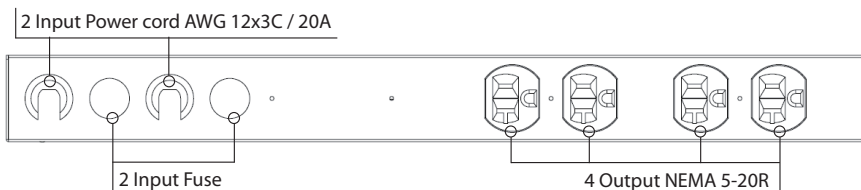
5.2. REAR PANEL

The back of the ASYS with its connectors, terminals and interfaces:

ASYS 16A-230:



ASYS 16A-120:



5.3. OPERATING PANEL

On the following scheme you can see the front panel of the ASYS.



Most functions of the ASYS are driven by an internal control device. A priority setting can be made from the operating panel to prefer a mains source. LEDs display the state of the relay group.

5.4. FEATURES

The ASYS provides redundant power supply to your load by switching it from preferred source to auxiliary source.

ASYS is compatible with UPS providing sinusoidal output (as well as direct main, generating set and all sinusoidal source)

- Break Before Make (open transition) transfer mode
- Back feed protection (according EN62310-1).
- Complete protection for overload and short-circuit. (with accessible FUSE Holder).
- Redundant power supply. (From input Source 1 and Source 2).
- AC source detection (voltage and current detection).
- Output detection (current detection).
- LED display.
- Different setting to adjust the voltage failure sensing level (+/- 12% ~ +/- 20%). see input/output table page 13
- Protection: IP30.
- Buzzer inhibition
- Automatic rated frequency sensing

6. OPERATING PROCEDURES

ASYS TRANSFER SWITCH panel display



LED 1 and LED 2 = Preferred Source indication:

Green LEDs indicate which Input Source is selected as the preferred



LEFT BUTTON = change the Preferred Source:

source 1 is the preferred source on the factory setting, the modification of the preferred source is done by pressing for 3 seconds on this button



LED input line = status of the input source

Green LEDs indicate a correct source is present

LED flashing indicates an incorrect input, voltage or frequency is out of range

LED off indicate the source is not present on the input



LED output power = input source feed to the load

Green LEDs on the line 1, the load is powered by input 1

Green LEDs on the line 2, the load is powered by input 2



FAULT LED = general alarm

Red LED indicates: Overload, Output short circuit; or Input Source Relay fault



RIGHT BUTTON = buzzer acknowledge

push the button for 1 second to stop the buzzer



To cancel alarm, push simultaneously, the left and right buttons for 3 seconds

1. In normal operation, output power is always supplied from the selected preferred source.
2. If the preferred source is out of range, ASYS will automatic transfer to the other source until the preferred source is recovered within preset tolerance.
3. If both sources are out of range, the ASYS output will be stopped. (Load is not powered under this condition)

6. 1. MANUAL SWITCH ON PROCEDURES

First Switch on from Source 1

- Check that all switches are OFF.
- Input the mains for source 1.
- Wait a few seconds until the logic is enabled and the LEDs on the display are switched ON.
 - Priority LED PS1 or PS2 depending on the default setting.
 - LED S1
 - LED SW1
- Input the mains for source 2.
- The following LEDs are illuminated:
 - Priority LED PS1 or PS2 depending on the default setting.
 - LED S1
 - LED S2
 - LED SW1 or SW2 according to the primary source

First Switch on from Source 2

- Check that all switches are OFF.
- Input the mains for source 2.
- Wait a few seconds until the logic is enabled and the LEDs on the display are switched ON.
 - Priority LED PS1 or PS2 depending on the default setting.
 - LED S2
 - LED SW2
- Input the mains for source 1.
- The following LEDs are illuminated:
 - Priority LED PS1 or PS2 depending on the default setting.
 - LED S1
 - LED S2
 - LED SW1 or SW2 according to the primary source

7. TECHNICAL DATA

7.1. INPUT/ OUTPUT FEATURES

	ASYS 16A-120	ASYS 16A-230
INPUT		
Nominal voltages	120V	220/230/240V selectable
Voltage acceptance window	Nominal +/- 12%* to +/- 20% adjustable**	
Working range voltage	80 ~ 145Vac	160 ~ 290Vac
Nominal frequency	50/60 Hz auto sensing	
	acceptance +/- 15%	
Current	16 Amps	
OUTPUT		
Voltage range	same as input	
Nominal frequency	same as input	
Current	16 Amps	
Typical Transfer time	6ms	
Maximum Transfer time	<= 15ms	

* = default

** = on demand

7.2. CONNECTION

	ASYS 16A-120	ASYS 16A-230
INLET		
	Power cord AWG12X3C/20A	2 x IEC 320-C20
OUTLET		
	4 x NEMA 5-20R	1 x IEC 320-C19 2 x 3 x IEC 320-C13

7.3. COMMUNICATIONS

Dry Contact (DB-9, pin type)

PIN N°.	Definition
PIN 4	Input Mains 1 (OK / NG)
PIN 8	Input Mains 2 (OK / NG)
PIN 1	Over Temperature
PIN 7	Overload
PIN 9	SUM Alarm
PIN 5	Common

7.4. MECHANICAL FEATURES

Items	Specification
Dimension	W = 430mm D = 315mm H = 44mm (1U)
Weight	5kg
Packaging sizes	W = 585mm D = 425mm H = 184mm
Structure	Rack Mount Unit (1U)
Material	Metallic Case
Colour	Pantone 432C

7.5. ENVIRONMENT

Items	Specifications
Operating temperature	0 to 40 °C
Storage temperature	-25 °C to 70 °C Continuous
Storage humidity	10% to 90%
Operation humidity	20%to 85% No condensing
Operation Altitude	≤ 1000m (without downgrading)
Audible noise	< 25dBA
Cooling	Natural Cooling
IP Protection	IP 30

7.6. SAFETY STANDARDS

EN62310-1. (With CE Mark)

7.7. EMC STANDARD

EMI	IEC62310-2, C1
EMS	IEC61000-4-2 level 3
	IEC61000-4-3 level 2 (Lab.)
	IEC61000-4-4 level 2
	IEC61000-4-5 level 3
	IEC 61000-2-2 LF Immunity
	IEC61000-4-6 level 2 (Lab.)
	IEC61000-3-2 Harmonic (Lab.)
	IEC61000-3-3 Flicks *

* For **ASYS 16A-230** only.

7.8. OVERCURRENT

– Overload:

105 to 125% (20A) = 45 sec: transfer is possible

126 to 150% (24A) = 27 sec: transfer is possible

151 to 210% (33.6A)= 5 sec: transfer is possible

211 to 300% (48A) = 2 sec: transfer is not possible

– Output short-circuit :

Complete protection is provided by the input FUSE subject to its operating characteristics.

7.9. EXTERNAL PROTECTION AND ISOLATION DEVICES

External protection devices need to be installed upstream and downstream of the equipment to protect the cables and the unit. Upstream these devices need to be selected and configured with the size of the unit in mind.

Disconnection devices must always be provided

All protection devices (circuit breakers and fuses) installed upstream of the unit need to be co-ordinated for discrimination with the ASYS input protection (fuses) and the ASYS overload capability.



If ASYS overload capacities are exceeded, the unit will switch off the output.



Depending on overload characteristic the ASYS either will trip the input fuses or drive only internal power relays to the open position.

8. TROUBLESHOOTING

If problems should occur, please check the following points before contacting the customer service department:

- Is the mains voltage present at the ASYS TRANSFER SWITCH input?
- Has one of the two input fuses tripped or open?

If you contact the customer service department, please have the following information ready:

- Device information (model name and serial number)
- An exact description of the problem (what load is being supplied, does the problem occur regularly or sporadically, ...)

Rectification of errors

Problem	Possible Cause	Solution
No display, no alarm.	Mains or feeding UPS units switched off.	Switch on the mains or feeding UPS units.
	No mains voltage present.	Have mains inspected by qualified electrician.
	Input fuses tripped.	Check and make sure the load capacity is within the specification, then replace a good fuse. If the problem persists, contact the customer service department.
Both mains indicator S1 and S2 do not illuminate, when mains voltage present.	Both input fuses tripped.	Check and make sure the load capacity is within the specification, then replace a good fuse. If the problem persists, contact the customer service department.
Alarm indicator F1 illuminates, acoustic alarm active with 0.5 second sequence.	ASYS Fault.	Contact the customer service department.
	Multiples consecutive transfers detection	Check the quality of the preferred source
	Overheating	Check and make sure the load capacity is within the specification, or decrease ambient temperature (less than 40°C).