ITYS ES

from 1000 to 3000 VA - Electrical Substation solutions for supplying MV/LV transformer cabins

The solution for

> Control devices
> Electric lines

Technology

> VFI “online double conversion”

High protection and high availability

- The ITYS ES series is a range of compact UPS systems available in 1000, 2000 and 3000 VA models with on-line double conversion technology (VFI) with sinusoidal absorption.
- ITYS ES guarantees permanent regulation of the output voltage and frequency. This technology is compatible with all IT and industrial applications and operating environments, installations with generator sets included.
- Wide tolerance on input voltage ensures that switchovers to battery mode are infrequent, significantly prolonging battery lifetime.
- The automatic bypass device switches over in zero time in the event of overload or failure, guaranteeing uninterrupted services.

Straightforward to install and easy to use

- The UPS is shipped ready for connection with internal batteries connected and charged.
- ITYS ES, with the manual bypass option is easy to install without any special plant engineering preparation, as it is equipped with built-in thermal protection.
- The LED monitoring/control panel and a buzzer make the equipment extremely easy and intuitive to use. The graphic indicating the power distribution path shows at a glance whether or not the system is working as it should.
- Battery efficiency can be tested via the control panel or using dedicated software.

Operating efficiency and versatility

- The versatility of these models makes them suitable for protecting critical devices in the industrial field.
- The standard equipment and communication accessories have been specially designed to satisfy the typical needs of installation or use in transformer cabins.
- In situations where automatic power management procedures are required, the communication software can be used to programme scheduled start-up and shutdown times.
- Restarting the UPS from the battery to power the DG before closing the main isolator.

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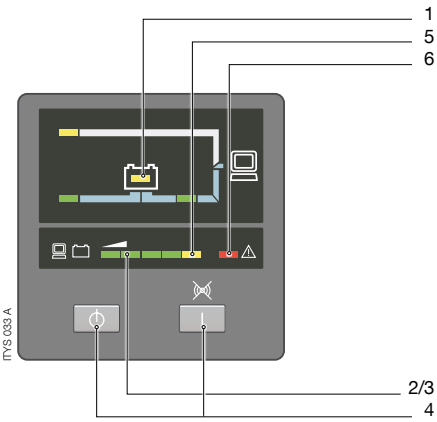
UPS - Technical data

	ITYS ES - UPS		
Item Code	ITYS ES 1k0	ITYS ES 2k0	ITYS ES 3k0
Sn [kVA]	1000	2000	3000
Pn [kW]	700	1400	2100
Input / output	1/1		
INPUT			
Rated voltage	230 V		
Voltage tolerance	160-300 V (up to 110 V at 60% of the load)		
Rated frequency	50/60 Hz		
Power factor	0.98		
OUTPUT			
Rated voltage	230 V (can be set to 220/240 V)		
Voltage tolerance	± 1.5%		
Rated frequency	range of synchronism 46-54 Hz		
Frequency stability (for 50 Hz)	50 Hz ± 0.2 in battery mode		
Overload	up to 150 % for 30 seconds		
Crest factor	3:1		
Wiring	4 x IEC 320	6 x IEC 320	4 x IEC 320 + terminals
BATTERIES			
Type	sealed lead-acid maintenance free - expected lifetime 3-5 years		
Back-up time at 75% of the rated load(1)	10 minutes	17 minutes	9 minutes
Sized for a back-up time of	115 minutes @ 50 W	154 minutes @ 100 W	216 minutes @ 150 W
Back-up time(2) + switching back on	60 minutes @ 50 W	60 minutes @ 100 W	60 minutes @ 150 W
Battery test	•	•	•
COMMUNICATION			
Interfaces	RS232 (DB9 connector) MODBUS protocol		
Communication slots	•	•	•
Modem/ADSL protection	•	•	•
EFFICIENCY			
On-line mode	up to 90%		
ENVIRONMENT			
Ambient service temperature	from 0 °C up to +40 °C (from 15 °C to 25 °C for maximum battery lifetime)		
Relative humidity	0-90 % non-condensing		
Maximum altitude	1000 m without de-rating (3000 m max)		
Noise level at 1 m	45 dBA		
UPS			
Dimensions W x D x H	145 x 400 x 220 mm	192 x 460 x 350 mm	
Weight	14 kg	34 kg	35 / 16 kg
Protection rating	IP20 (according to IEC 60529)		
Colours	Cabinet 430C, front 431C		
COMPLIANCE WITH STANDARDS			
Safety	EN 62040-1		
EMC	EN 62040-2 Equipped with input filters to suppress atmospheric interference		
Product certification	CE		
	ITYS ES - Manual bypass (3)		
Sn [kVA]	1000	2000	3000
INPUT			
Type of terminals	CBD6		
Wire Size	6 mm² max		
Nominal current	13.05 A max		
BYPASS			
Switching positions	1: UPS - 2: MAINS		
Switching time	6 ms max		
LOAD OUTPUT			
Type of terminals	CBD6		
Wire Size	6 mm² max		
UPS SUPPLY OUTPUT			
Type of socket	IEC 320 10 A		IEC 320 16 A
SURGE ARRESTORS (on request)			
Type	"L" in compliance with CEI EN 61643-11		
L/N pulse current	40 kA (8/20) max		
VAC N/GND	255 V max		
VACL/N	320 V max		

(1) @ 25 °C with charged battery.
(2) Factory setting: back-up time limited to 60 minutes to permit subsequent restarting with battery.
(3) Upon request.

The command / control panel



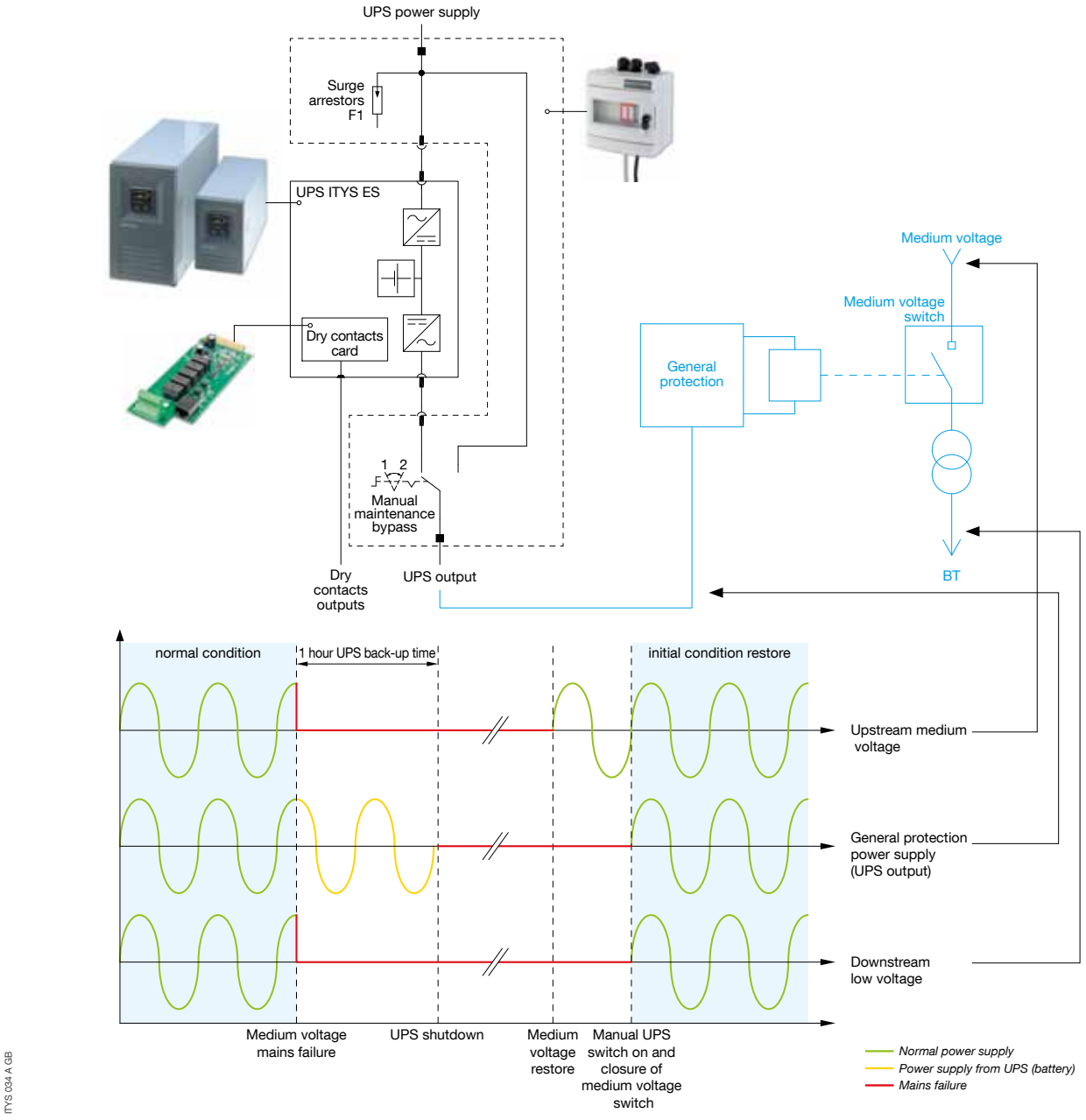
Graphic operating status:
1. Battery indicator
2. LED bar - % of connected load
3. LED bar - % battery available
4. ON/OFF buttons and deactivation of the buzzer
5. Overload indicator
6. Fault indicator

ITYS ES

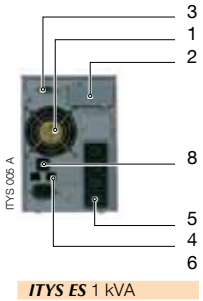
from 1000 to 3000 VA - Electrical Substation

Single-phase UPS systems

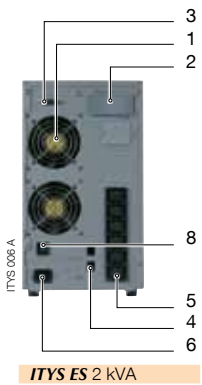
Architecture



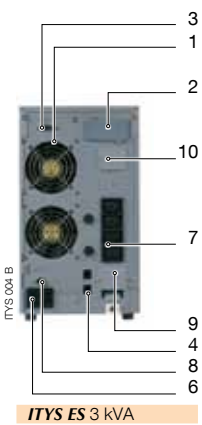
Connections



ITYS ES 1 kVA



ITYS ES 2 kVA



ITYS ES 3 kVA

1. Fan
2. Slot for optional communication boards
3. RS232 serial port (JBUS protocol)
4. Telephone / modem / ASDL line protection
5. Output sockets (IEC 320)
6. Input socket (IEC 320)
7. Manual bypass
8. Input protection (Thermal breaker)
9. Output terminals
10. Connection for external battery cabinet (LB models only)

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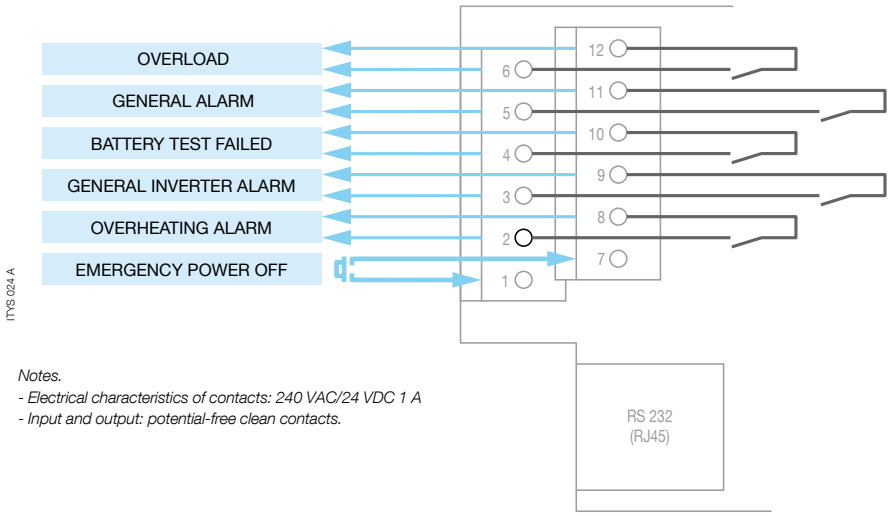
Programmable clean contacts board (option)

Dedicated interface with clean contacts, can be installed on the rear slot: gives the status of the UPS with five potential-free contacts and provides an input for remote emergency stopping (EP0).


ITYS 023 A



ITYS 024 A

Notes.
- Electrical characteristics of contacts: 240 VAC/24 VDC 1 A
- Input and output: potential-free clean contacts.

Standard communication features

- LOCAL VIEW: ideal UPS monitoring and shutdown point-to-point solution for Windows®, Linux and Mac OS X® operating systems.
- MODBUS/JBUS RTU (RS 232).

Communication options

- NET VISION: professional WEB/SNMP interface for UPS monitoring and shutdown management of several operating systems.
- Dry contact interface.

Manual bypass (option)

Specially designed for ITYS ES, the manual bypass option enables:

- simplified installation: connection to the system is made with industrial grade terminals, while connection to the UPS is via the pre-wired plug and socket supplied.
- easy maintenance and uninterrupted operation: thanks to the manual bypass isolator it is possible to service or replace the UPS while maintaining the power supply to the devices downstream in complete safety for the operator. This operation has been specially devised to be simple to carry out, even in an emergency.
- increased level of equipment immunity to surge voltages, typical for this type of application, thanks to suitable surge arrestors included in addition to standard UPS protection.

ITYS 025 A

Tech info

The CEI 016 STANDARD for auxiliary cabin equipment requires an uninterrupted power supply to the control circuits for the PG and DG.

The control circuits for the PG, DG and coil must be powered by the same auxiliary voltage when there is no power. The power supply must be guaranteed for a back-up time of 1 hour, either by the UPS or by buffer batteries.

The DG must be powered up by skilled personnel if out of service for a long time due to maintenance or failure.

It is necessary to power the DG before closing the main isolator.

The required protection comprises:

- Mains power cuts due to poor maintenance of the user's system.
- Inappropriate tripping of the DG because of faults in the trip circuit.
- Alert signalling if the DG trips due to a power failure (system with regular maintenance).