MGE™ UPSILON™STS
50, 60 Hz
30A-60A-100A-160A 250A-400A-630A

Installation and user manual
Introduction

Thank you for selecting an APC by Schneider Electric product to protect your electrical equipment.

The MGE™ Upsilon™ STS range has been designed with the utmost care. We recommend that you take the time to read this manual to take full advantage of the many features of your new equipment.

APC by Schneider Electric pays great attention to the environmental impact of its products. Measures that have made MGE™ Upsilon™ STS a reference in environmental protection include:

➢ the eco-design approach used in product development,
➢ production on an industrial site certified ISO 14001,
➢ recycling of MGE™ Upsilon™ STS at the end of its service life.

To discover the entire range of APC by Schneider Electric products and the options available for the MGE™ Upsilon™ STS range, we invite you to visit our web site at www.apc.com or contact your APC by Schneider Electric representative.

Standards

The STS must be installed in agreement with the IEC 60364 standards family (including IEC 60364-4-41, IEC 60364-4-42 and IEC 60364-4-43) and local regulations.

Emc

This product is an apparatus answering the Class A requirements as described in the CISPR 11 standard. It is intended to be connected to an installation separated from the public mains by a transformer. It can be connected to the public mains (residential installation or any installation having the same supply mains) only by a professional, insuring that the installation requirements are respected.

All products in the MGETM UpsilonTM STS range are protected by patents. They implement original technology not available to competitors of APC by Schneider Electric.

To take into account evolving standards and technology, equipment may be modified without notice. Indications concerning technical characteristics and dimensions are not binding unless confirmed by APC by Schneider Electric.

This document may be copied only with the written consent of APC by Schneider Electric. Authorised copies must be marked “MGETM UpsilonTM STS Installation and User Manual, no. 3402011300”.
Foreword

Using this document

Information may be found primarily by consulting:
• the contents,
• the index.

Pictograms

Document

Display

Important instructions that must be followed
Up / down selection
Go up or down one page

Information, advice, help
Other selection
Select date for event log consultation

Visual indication
Confirm
Increase

Action
Details
Reduce

Audio indication
Scrolling menu
Save

LED off
Graphic display
Enter characters

LED flashing
Graphic display for 1 phase
Phase-to-neutral measurements

LED on green
Graphic display for 3 phases simultaneously
Phase-to-phase measurements

LED on orange
Return to previous display
Interrupt manual transfer without break

LED on red
Delete
Transfer

Earth cables
Access to measurements
Alarm

Other cables
Buzzer off
Status conditions

Note: LEDs and switches are represented in their rest position. Transient conditions are indicated by dotted arrows.
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1. Presentation

1.1 MGE™ Upsilon™ STS 30 - 60 - 100 - 160 - 250 A (cabinet 1400 mm high)

Dimensions in mm

<table>
<thead>
<tr>
<th>Height</th>
<th>Width</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1400 ±10</td>
<td>615</td>
<td>565</td>
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</tbody>
</table>

Weight in kg

<table>
<thead>
<tr>
<th>STS</th>
<th></th>
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</thead>
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<tr>
<td>30 - 60 - 100 A</td>
<td>157 kg</td>
</tr>
<tr>
<td>160 - 250 A</td>
<td>174 kg</td>
</tr>
</tbody>
</table>

Footprint

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0.34 m²</td>
</tr>
</tbody>
</table>

Important: correct ventilation requires at least 250 mm of free space behind the cabinet.

1.2 MGE™ Upsilon™ STS 30 - 60 - 100 - 160 - 250 - 400 - 630 A (cabinet 1900 mm high)

Dimensions in mm

<table>
<thead>
<tr>
<th>Height</th>
<th>Width</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900 ±10</td>
<td>715 ±10</td>
<td>825 ±10</td>
</tr>
</tbody>
</table>

Weight in kg

<table>
<thead>
<tr>
<th>STS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>30 - 60 - 100 A</td>
<td>215 kg</td>
</tr>
<tr>
<td>160 - 250 A</td>
<td>225 kg</td>
</tr>
<tr>
<td>400 - 630 A</td>
<td>327 kg</td>
</tr>
</tbody>
</table>

Footprint

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0.60 m²</td>
</tr>
</tbody>
</table>
1. Presentation

1.3 Access to control and connections

MGE™ Upsilon™ STS 30 · 60 · 100 · 160 · 250 A (cabinet 1400 mm high)

Only trained and authorized personnel may work on this product, in regard to the installation, use or maintenance operations.

1. Switch Q1 for Source S1
2. Circuit breaker Q4 for control electronics power supply
3. Circuit breaker Q6 for control electronics power supply
4. Switch Q2 for Source S2
5. Communication card cage
6. Bypass switch Q1BP for Source S1
7. Output switch Q3
8. Bypass switch Q2BP for Source S2
9. Source S2 connection
10. Output connections
11. Cable way
12. Source S1 connection
13. Earth bar
14. Connection cover
15. Opening for cables
16. Phases separators
17. Base panels
18. Adjustable foot pads

MGE™ Upsilon™ STS 30 · 60 · 100 · 160 · 250 · 400 · 630 A (cabinet 1900 mm high)

Only trained and authorized personnel may work on this product, in regard to the installation, use or maintenance operations.

1. Switch Q1 for Source S1
2. Circuit breaker Q4 for control electronics power supply
3. Circuit breaker Q6 for control electronics power supply
4. Switch Q2 for Source S2
5. Communication card cage
6. Bypass switch Q1BP for Source S1
7. Output switch Q3
8. Bypass switch Q2BP for Source S2
9. Source S2 connection
10. Output connections
11. Cable way
12. Source S1 connection
13. Earth bar
14. Connection cover
15. Opening for cables
16. Phases separators
17. Base panels
18. Adjustable foot pads
1. Presentation

1.4 Man / machine interface

![Diagram of UPS system]

- UPS galaxy, deuxième étage, salle 13
- UPS galaxy, deuxième étage, salle 14
- Source secours
- Source prioritaire

NORMAL OPERATION

- Normal operating current: I1 17 A, I2 9 A, I3 2 A
- Power: 1 KW, 6 KVA
- Power factor: PF 0.3
- Preferred source: S1
- Manual transfer button
- Menu button
- Preferred source: S2
- Help button
- Status of switch Q1 (green, red)
- Status of switch Q2 (green, red)
- Status of source S1 (green, orange, red)
- Status of source S2 (green, orange, red)
- Status of static switch 1 (green, red)
- Status of static switch 2 (green, red)
- Status of bypass switch Q2BP
- Status of switch Q3
- Status of bypass switch Q1BP
- Status of system output to the load (green, orange, red)
1. Presentation

1.5 Relay communication card

1.6 JBus communication card

1.7 MGE SNMP/Web card communication card (Optional)

1.8 PowerServices Telpac communication card (Optional)
2. Positioning

The product must be installed in a restricted access area with access only to trained and authorized service personnel.

Only trained and authorized personnel may work on this product, in regard to the installation, use or maintenance operations.

**MGE™ Upsilon™ STS 30 - 60 - 100 - 160 - 250 A** (cabinet 1400 mm high)

1. Unclip the base panels 14.
2. Set the cabinet to a level position using the adjustable foot pads 15.
3. Put the base panels 14 back in place.

**Important:**

Correct ventilation requires at least 250 mm of free space behind the cabinet.

Never expose the STS to direct sunlight, sources of heat or strong electromagnetic fields.

It must only be only positioned on a concrete floor or any other non-combustible surface.

**MGE™ Upsilon™ STS 30 - 60 - 100 - 160 - 250 - 400 - 630 A** (cabinet 1900 mm high)

1. Unclip the base panels 14.
2. Set the cabinet to a level position using the adjustable foot pads 15.
3. Put the base panels 14 back in place.

**Important:**

Correct ventilation requires at least 350 mm of free space above the cabinet.

Never expose the STS to direct sunlight, sources of heat or strong electromagnetic fields.

It must only be only positioned on a concrete floor or any other non-combustible surface.

**Important:**

The product must be installed in a restricted access area with access only to trained and authorized service personnel.

Only trained and authorized personnel may work on this product, in regard to the installation, use or maintenance operations.

Never expose the STS to direct sunlight, sources of heat or strong electromagnetic fields.

It must only be only positioned on a concrete floor or any other non-combustible surface.

The product must be installed in a restricted access area with access only to trained and authorized service personnel.

Only trained and authorized personnel may work on this product, in regard to the installation, use or maintenance operations.

Never expose the STS to direct sunlight, sources of heat or strong electromagnetic fields.

It must only be only positioned on a concrete floor or any other non-combustible surface.
2. Installation

2.2 Power connections

See section 6.1 for information on sizing protection devices and cables (Appendix, Technical data). The Upsilon STS has been designed to allow connection to a TT, TN and IT system (as defined by standards IEC/EN 60950-1 or IEC 60364-3).

SELV circuits must have a separated path from other circuits or must be protected by a reinforced insulation.

- Separate the metallic conduits or ducts containing the power wiring (input / output) by at least 8 cm (3 inches) from the metallic conduits which contain the control wiring.
- Separate the non-metallic conduits or ducts containing the power wiring (input / output) by at least 30 cm (12 inches) from the conduits which contain the control wiring.
- Power wiring (input/output) and control wiring must always intersect at right angles.

MGE™ Upsilon™ STS 30 to 250 A

Input: 3 phases + PEN
Output: 3 phases + PEN

See section 1.3 for information on accessing the connections. Connections are made using lugs connected to threaded studs (diameter 8 mm). The cables are tied to the earth bar.

MGE™ Upsilon™ STS 30 to 250 A

Input: 3 phases + PEN
Output: 3 phases + PE + Neutral

See section 1.3 for information on accessing the connections. Connections are made using lugs connected to threaded studs (diameter 8 mm). The cables are tied to the earth bar.
2. Installation

**MGE™ Upsilon™ STS30 to 250 A**

Input: 3 phases + PEN
Output: 3 phases + PE

See section 1.3 for information on accessing the connections.
Connections are made using lugs connected to threaded studs (diameter 8 mm).
The cables are tied to the earth bar.

**MGE™ Upsilon™ STS 30 to 250 A**

Input: 3 phases + PE + Neutral
Output: 3 phases + PE + Neutral

See section 1.3 for information on accessing the connections.
Connections are made using lugs connected to threaded studs (diameter 8 mm).
The cables are tied to the earth bar.

Only one earth must be connected to the product.

**MGE™ Upsilon™ STS 30 to 250 A**

Input: 3 phases + PE
Output: 3 phases + PE

See section 1.3 for information on accessing the connections.
Connections are made using lugs connected to threaded studs (diameter 8 mm).
The cables are tied to the earth bar.

Only one earth must be connected to the product.
2. Installation

See section 6.1 for information on sizing protection devices and cables (Appendix, Technical data). The Upsilon STS has been designed to allow connection to a TT, TN and IT system (as defined by standards IEC/EN 60950-1 or IEC 60364-3).

**MGE™ Upsilon™ STS 400 to 630 A**

**Input:** 3 phases + PEN  
**Output:** 3 phases + PEN

See section 1.3 for information on accessing the connections. Connections are made using lugs connected to two threaded studs per phase (diameter 10 mm). The cables are tied to the earth bar.

---

**MGE™ Upsilon™ STS 400 to 630 A**

**Input:** 3 phases + PEN  
**Output:** 3 phases + PE + Neutral

See section 1.3 for information on accessing the connections. Connections are made using lugs connected to two threaded studs per phase (diameter 10 mm). The cables are tied to the earth bar.
2. Installation

**MGE™ Upsilon™ STS 400 to 630 A**

**Input:** 3 phases + PEN  
**Output:** 3 phases + PE

See section 1.3 for information on accessing the connections.  
Connections are made using lugs connected to two threaded studs per phase (diameter 10 mm).  
The cables are tied to the earth bar.

**MGE™ Upsilon™ STS 400 to 630 A**

**Input:** 3 phases + PE + Neutral  
**Output:** 3 phases + PE + Neutral

See section 1.3 for information on accessing the connections.  
Connections are made using lugs connected to two threaded studs per phase (diameter 10 mm).  
The cables are tied to the earth bar.  
Only one earth must be connected to the product.

**MGE™ Upsilon™ STS 400 to 630 A**

**Input:** 3 phases + PE  
**Output:** 3 phases + PE

See section 1.3 for information on accessing the connections.  
Connections are made using lugs connected to two threaded studs per phase (diameter 10 mm).  
The cables are tied to the earth bar.  
Only one earth must be connected to the product.
2. Installation

Cable running for cables entering through the top of the MGE™ Upsilon™ STS 30 to 250 A cabinet

16 Cable-running zone for cables entering through the top

17 Cable gland plate that must be drilled to cable size
2. Installation

2.3 Connection of the communication cards

SELV circuits must have a separated path from other circuits or must be protected by a reinforced insulation.

- Separate the metallic conduits or ducts containing the power wiring (input / output) by at least 8 cm (3 inches) from the metallic conduits which contain the control wiring.
- Separate the non-metallic conduits or ducts containing the power wiring (input / output) by at least 30 cm (12 inches) from the conduits which contain the control wiring.
- Power wiring (input/output) and control wiring must always intersect at right angles.

![Diagram showing connection of communication cards]

For information on using the communication card, see the JBUS communication card manual.

Only one communication port (the RS232 OR the RS485) may be used at a time.

2.4 Connection of the JBUS communication card

RS232:
- Pin 2: Rxd (or Txd)
- Pin 3: Txd (or Rxd)
- Pin 5: Earth

RS485:
- Pin 4: R-
- Pin 5: T-
- Pin 8: R+
- Pin 9: T+

For information on using the communication card, see the JBUS communication card manual.

Tie the cables to the cable way 16 on the door.

Do not run the control wires with the power cables.

Use the cable cut-out 17 to connect external cables.

Two slots are available in the card cage 5 for additional cards.

Separate the metallic conduits or ducts containing the power wiring (input / output) by at least 8 cm (3 inches) from the metallic conduits which contain the control wiring.

Separate the non-metallic conduits or ducts containing the power wiring (input / output) by at least 30 cm (12 inches) from the conduits which contain the control wiring.

Power wiring (input/output) and control wiring must always intersect at right angles.
2. Installation

2.5 Connection of the relay communication card

The card must only be installed by qualified personnel. Before proceeding, disconnect all power sources connected to the card. Do not mix Safety Extra Low Voltage (SELV) circuit and non-SELV circuits on the same board. Requirements for SELV circuits must be respected when connected to other equipment. The requirements for the SELV circuits must be respected when connecting them to other equipment; i.e. no hazardous voltage must be connected to the SELV circuits and a relevant distance must be upheld between SELV circuits and non-SELV circuits.

Contact characteristics:

Output:
Permissible voltage: 250 V AC, 30 V DC
Permissible current: 2 A
Cable: 4 x 0.93 mm², Ø 6.6 mm ± 0.3 mm.

Input:
Note: the inputs must be considered as SELV circuits.

Switched voltage: 5 V DC
Current drawn: 10 mA
Cable: 4 x 0.34 mm², Ø 5 mm ± 0.5 mm.

The contacts can be configured see paragraph 3.6 page 24

Place the micro-switches SA1 as shown in the diagram opposite.

1 - Remove the screws and the protection cover.
2 - Run the communication cables through the openings.
3 - Connect the cables to the input terminal block and the output terminal block.
4 - Put the cover back in place and secure it with the screws.
5 - Secure the cables using the screws.
6 - Note the position of the power sources on the labels.
7 - Insert the card in its slot.
8 - Secure the card using the two screws.

The card must always must always be fitted with its protective cover.
3. Operation

Make sure that the voltages of the two sources S1 and S2 are the same as the rated voltage (380/400/415V) of MGE™ Upsilon™ STS, otherwise see section 3.5 (Customization).

Switch Q3 is unlocked using a single key (K2) that must be inserted into the lock at the time of operation.

Switch Q1BP or Q2BP is unlocked using a single key (K1) that must be inserted into the lock at the time of operation.

3.1 Start-up

1 - Check that the two sources are energised (voltage present).
2 - Set circuit breakers Q4 and Q6 to the ON position (position 1).
3 - Turn switch Q1BP to the ON position (position 1). LEDs 24, 37 and 38 go on. The load is supplied by Source 1 via the bypass.
4 - Set switches Q1 and Q3 to the ON position (position 1). LEDs 29, 31, 33 and 36 go on.
5 - Turn switch Q1BP back to the OFF position (position 0). LED 37 goes off.
6 - Set switch Q2 to the ON position (position 1). LEDs 30 and 32 go on.

The load is supplied by Source 1.

If LED 33 is red or off, if LEDs 31, 38 and/or 32 are orange or red: see section "Maintenance".

3.2 Shutdown

1 - Set switches Q1, Q2 and Q3 to the OFF position (position 0).
2 - Set circuit breakers Q4 and Q6 to the OFF position (position 0). All LEDs should go off.

The load is not supplied with power.

Dangerous voltage levels are still present inside the Upsilon STS cabinet, in the connection zone.

Only trained and authorized personnel may work on this product, in regard to the installation, use or maintenance operations.
3. Operation

3.3 Normal mode. Operation on preferred source S1
Operation on the preferred source

During normal operation on the preferred source S1, LEDs 24, 29, 30, 32, 33, 36 and 38 are on in green.

If LED 38 is orange, there is an overload.
If LED 38 is red, the load is no more supplied.

Automatic transfer to the alternate source

The load is automatically transferred to the source offering the highest level of power quality.

For example, if the preferred source S1 goes outside tolerances, LED 31 goes orange or red. The buzzer beeps. MGE™ Upsilon™ STS automatically transfers the load to the alternate source S2. LEDs 24, 29, 30, 32, 34, 36 and 38 are on.

MGE™ Upsilon™ STS transfers the load back to the preferred source S1 as soon as it returns to within tolerances.

To stop the buzzer, press the function button marked .

Manual transfer to the alternate source

1 - Press the manual transfer button 25:

2 - Enter the password by following the instructions on the display.

3 - validate the password by pressing the grey function button 23 marked on the screen.

LEDs 24 and 27 flash. After the transfer, the green LED 27 goes on.

The load is supplied by Source 2.

Transfer is authorised only if the two sources are within tolerances (voltage, frequency) and their phase displacement is within the set limits. If these two conditions are not met, the transfer order is stored in memory and executed when the voltages cross zero. If transfer does not take place within sixty seconds, the order is cancelled.
3. Operation

Manual transfer to an out-of-phase alternate source

When the two sources are not in phase, it is possible to force manual transfer using the commands on the screen, after entering a password.

1 - Enter the password (see section 3.5, Customization).

2 - Follow the instructions provided on the screen.
3. Operation

3.4 Display screens
3. Operation

3.5 Upsilon STS customization

1 - Press the menu button 28.
2 - Select "Setup", then "Customization" using the function buttons 23 marked  down or up.
3 - Confirm the order by pressing the function button 23 marked .
4 - Enter the password.

The password ØØØ   is set in the factory.
Select "Setup", then "Password" to personalise the password.

From the screen menu:
1 - Select the source to be configured
2 - Change the parameter(s)
3 - Save the customization settings

<table>
<thead>
<tr>
<th>Feature</th>
<th>Factory setting</th>
<th>Customization</th>
<th>Source 1</th>
<th>Source 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage</td>
<td>400 V</td>
<td>380/400/415 V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overvoltage threshold</td>
<td>Un+ 10%</td>
<td>+5% to +20%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undervoltage threshold</td>
<td>Un -10%</td>
<td>-5% to -20%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overfrequency threshold</td>
<td>Fn + 5%</td>
<td>+5% to +10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underfrequency threshold</td>
<td>Fn -5%</td>
<td>-5% to -10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phase sync. tolerance</td>
<td>15%</td>
<td>1 à 45° in 1° steps</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automatic retransfer</td>
<td>Yes</td>
<td>Yes/No</td>
<td></td>
<td></td>
</tr>
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</table>
3. Operation

3.6 Customization of the relay communication card

Factory settings

Output and output customization

Outputs (contacts 1 to 6)

<table>
<thead>
<tr>
<th>Status conditions available on each output contact</th>
</tr>
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<tbody>
<tr>
<td>- No associated function</td>
</tr>
<tr>
<td>- Equipment powered</td>
</tr>
<tr>
<td>- Overload</td>
</tr>
<tr>
<td>- General alarm</td>
</tr>
<tr>
<td>- Device alarm</td>
</tr>
<tr>
<td>- S1 (source 1) out of tolerance</td>
</tr>
<tr>
<td>- S2 (source 2) out of tolerance</td>
</tr>
<tr>
<td>- Phase hors tolerances</td>
</tr>
<tr>
<td>- S1 active</td>
</tr>
<tr>
<td>- S2 active</td>
</tr>
<tr>
<td>- S1 priority</td>
</tr>
<tr>
<td>- Transfer forbidden</td>
</tr>
<tr>
<td>- Re-transfer authorized</td>
</tr>
</tbody>
</table>

Inputs (contacts A and B)

<table>
<thead>
<tr>
<th>Commands available on each input contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>- No associated function</td>
</tr>
<tr>
<td>- Fault acknowledgement</td>
</tr>
<tr>
<td>- Selection S1 (source 1)</td>
</tr>
<tr>
<td>- Selection S2 (source 2)</td>
</tr>
<tr>
<td>- Automatic re-transfer forbidden</td>
</tr>
<tr>
<td>- Automatic re-transfer authorized</td>
</tr>
<tr>
<td>- Transfer forbidden</td>
</tr>
<tr>
<td>- Transfer authorized</td>
</tr>
</tbody>
</table>

Contact configuration

The output contacts are controlled directly by the STS. All changes of state of input contacts are transmitted to the STS.

All contacts* are Normally Open (N.O.)

<table>
<thead>
<tr>
<th>Contact</th>
<th>Output</th>
<th>Input</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open</td>
<td>Inactive state</td>
<td>Command inactive</td>
</tr>
<tr>
<td>closed</td>
<td>Active state</td>
<td>Command active</td>
</tr>
</tbody>
</table>

* External contacts for the inputs

The contacts can be individually configured for Normally Closed (N.C.) operation by placing micro-switches SA2 to ON.

<table>
<thead>
<tr>
<th>Micro-switch</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>B</td>
</tr>
<tr>
<td>7</td>
<td>A</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

If the micro-switch is OFF, the signal is N.O., otherwise it is N.C.
4.1 Identification of anomalies

Only trained and authorized personnel may work on this product, in regard to the installation, use or maintenance operations.

STS indicator anomalies

<table>
<thead>
<tr>
<th>General-alarm LED</th>
<th>S1 31 or S2 32 LED</th>
<th>Static-switch LED 33 or 34</th>
<th>Buzzer</th>
<th>System output LED 38</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="LED" /></td>
<td>-</td>
<td>-</td>
<td>Beeps</td>
<td>-</td>
<td>Internal STS fault.</td>
</tr>
<tr>
<td><img src="image" alt="LED" /></td>
<td><img src="image" alt="LED" /></td>
<td>-</td>
<td>Beeps</td>
<td>-</td>
<td>Degraded source, load still supplied.</td>
</tr>
<tr>
<td><img src="image" alt="LED" /></td>
<td><img src="image" alt="LED" /></td>
<td>-</td>
<td>Beeps</td>
<td>-</td>
<td>Source outside tolerances, no voltage. The load cannot be supplied by this source.</td>
</tr>
<tr>
<td><img src="image" alt="LED" /></td>
<td><img src="image" alt="LED" /></td>
<td>Beeps</td>
<td>-</td>
<td></td>
<td>Static-switch fault.</td>
</tr>
<tr>
<td><img src="image" alt="LED" /></td>
<td></td>
<td>Beeps</td>
<td>-</td>
<td>Overload. (1)</td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="LED" /></td>
<td></td>
<td>Beeps</td>
<td>-</td>
<td>Load not supplied.</td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="LED" /></td>
<td></td>
<td>Beeps</td>
<td>-</td>
<td>Source state not measurable.</td>
<td></td>
</tr>
</tbody>
</table>

The meaning of all these anomalies are detailed on the display:
Select the alarm: the corresponding informations are displayed.

(1) The product is overloaded without any other consequence for the load.

Relay communication card indicator anomalies

If the communication card green indicator remains continuously off:
- Check the card is correctly inserted into its slot and its protective cover is correctly screwed-on.
- Check the STS is powered.
- Remove the card and re-insert it.

If the communication card green indicator remains continuously on:
- Remove the card and re-insert it.

If an alarm is incorrectly triggered:
- Check the signal’s NO/NC configuration corresponds to your installation (micro-switches SA2, §3.6).
- Check the STS operating mode is correctly configured (micro-switches SA1, §2.5).

If the problem continues, contact our after-sales service (details available at www.apc.com).
4. Maintenance

4.2 Transfer to the manual bypass

Before any servicing, Upsilon STS must be de-energised by transferring to the bypass.

Switch Q3 is unlocked using a single key (K2) that must be inserted into the lock at the time of operation.

Switch Q1BP or Q2BP is unlocked using a single key (K1) that must be inserted into the lock at the time of operation.

In order to continue supplying the load, switch Q1BP or Q2BP must be closed (depending on the active source) before opening switch Q3.

The procedure for switching the manual by-pass is detailed in two places:

**HMI**

Press the menu key 26.

Go to the "Maintenance" menu and then to the "Bypass procedure" page using the function keys 23.

Follow the instructions on the display

**In the device**

The procedure for switching to manual by-pass is printed on the device.
5. Environment

This product has been designed to respect the environment
It does not contain CFCs or HCFCs.
It is manufactured on a production site certified ISO 14001.

UPS recycling at the end of service life
APC by Schneider Electric undertakes to recycle, by certified companies and in compliance with all applicable regulations, all products recovered at the end of their service life (contact your APC by Schneider Electric branch office).

Packing
Packing materials must be recycled in compliance with all applicable regulations.

Web site: www.apc.com
6. Appendix

6.1 Technical data

Output currents and voltage

<table>
<thead>
<tr>
<th>Rated output current:</th>
<th>30 A</th>
<th>60 A</th>
<th>100 A</th>
<th>160 A</th>
<th>250 A</th>
<th>400 A</th>
<th>630 A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input and output voltage:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>◗ Rated operating voltage:</td>
<td>380 V / 400 V / 415 V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>◗ Maximum voltage:</td>
<td>498 V (415 V +20%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>◗ Minimum voltage:</td>
<td>247 V (380 V -35%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>◗ Rated frequency:</td>
<td>50 or 60 Hz (45 Hz minimum, 66 Hz maximum)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Thermal characteristics

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>◗ at rated power:</td>
<td>150 W</td>
<td>195 W</td>
<td>260 W</td>
<td>350 W</td>
<td>495 W</td>
<td>735 W</td>
<td>1070 W</td>
</tr>
<tr>
<td>◗ at 50% rated power:</td>
<td>150 W</td>
<td>195 W</td>
<td>260 W</td>
<td>350 W</td>
<td>495 W</td>
<td>735 W</td>
<td>1070 W</td>
</tr>
<tr>
<td>Required ventilation:</td>
<td>350 m³/h</td>
<td>350 m³/h</td>
<td>350 m³/h</td>
<td>1600 m³/h</td>
<td>1600 m³/h</td>
<td>2300 m³/h</td>
<td>2300 m³/h</td>
</tr>
</tbody>
</table>

(1) These characteristics are calculated for a voltage of 400 V and a power factor of 0.8.

Noise level

Noise in dB (ISO 3746):

|                  | 55 | 55 | 55 | 59 | 59 | 59 | 59 |

Cable sizes (phases and neutral)

<table>
<thead>
<tr>
<th>Recommended size (2) in mm²</th>
<th>10</th>
<th>16</th>
<th>25</th>
<th>50</th>
<th>95</th>
<th>185</th>
<th>2 x 150</th>
</tr>
</thead>
<tbody>
<tr>
<td>copper conductors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>aluminium conductors</td>
<td>16</td>
<td>25</td>
<td>35</td>
<td>70</td>
<td>150</td>
<td>2 x 120</td>
<td>4 x 95</td>
</tr>
<tr>
<td>Maximum size in mm²:</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>120</td>
<td>120</td>
<td>240</td>
<td>240</td>
</tr>
<tr>
<td>Max. number of cables per phase: (3)</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

(2) Cable cross-sections have been calculated according to allowable temperatures rises and take into account line voltage drops for a maximum length of 100 metres (AC circuit). For greater lengths, choose cross-sections that limit the voltage drop to 3% (AC circuit).

(3) NF C 15-100 authorizes a maximum of 4 cables per phase.

Recommended protection devices upstream of MGE™ Upsilon™ STS

<table>
<thead>
<tr>
<th>Type of circuit breaker (3):</th>
<th>C60L 32A</th>
<th>NS100H 4P 4D</th>
<th>NS160H 4P 4D</th>
<th>NS250H 4P 4D</th>
<th>NS400H 4P 4D</th>
<th>NS630H 4P 4D</th>
</tr>
</thead>
<tbody>
<tr>
<td>TNS system:</td>
<td></td>
<td>NS100H 3P</td>
<td>NS160H 3P</td>
<td>NS250H 3P</td>
<td>NS400H 3P</td>
<td>NS630H 3P</td>
</tr>
<tr>
<td>TNC system:</td>
<td></td>
<td>STR22SE</td>
<td>STR22SE</td>
<td>STR22SE</td>
<td>STR23SE</td>
<td>STR23SE</td>
</tr>
<tr>
<td>Trip unit (3):</td>
<td>curve C</td>
<td>STR22SE</td>
<td>STR22SE</td>
<td>STR22SE</td>
<td>STR23SE</td>
<td>STR23SE</td>
</tr>
<tr>
<td>Thermal setting:</td>
<td>1,05 In</td>
<td>≤1 In</td>
<td>≤1 In</td>
<td>≤1 In</td>
<td>≤1 In</td>
<td>≤1 In</td>
</tr>
<tr>
<td>Magnetic setting:</td>
<td>10xIn</td>
<td>≤10xIn</td>
<td>≤10xIn</td>
<td>≤10xIn</td>
<td>≤10xIn</td>
<td>≤10xIn</td>
</tr>
</tbody>
</table>

(3) The products indicated are taken from the Schneider Electric Low Voltage catalogue (Merlin Gerin brand).
6. Appendix

6.2 Simplified diagrams

Upsilon STS simplified diagram

During an overload, transfer between sources is disabled.

Permissible-overload curve
6. Appendix

Simplified diagram of an installation

6.3 Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternate source</td>
<td>Backup source that steps in if the preferred source fails.</td>
</tr>
<tr>
<td>JBUS communication card</td>
<td>Internal card implementing the JBus protocol on a serial link to supply the user with system information.</td>
</tr>
<tr>
<td>MGE SNMP/Web card communication card (optional)</td>
<td>Internal card providing user information via an Ethernet link using HTTP/HTTPS and SNMP(v1) protocols.</td>
</tr>
<tr>
<td>PowerServices Telpac via a communication card (optional)</td>
<td>Internal card providing information to the APC by Schneider Electric teleservice centre V.34 modem.</td>
</tr>
<tr>
<td>Load</td>
<td>Device(s) or system(s) connected the MGETM Upsilon™ STS output.</td>
</tr>
<tr>
<td>Manual bypass</td>
<td>Q1BP and Q2BP switches, accessible to the user, that may be used to directly supply the load from Source S1 or S2. The bypass enables servicing on the equipment without interrupting the supply of power to the load.</td>
</tr>
<tr>
<td>Normal mode</td>
<td>Operating mode during which the load is supplied by the preferred source.</td>
</tr>
<tr>
<td>Preferred source</td>
<td>Source selected as the normal source of power.</td>
</tr>
<tr>
<td>Relay communication card</td>
<td>Internal card implementing contacts to supply the user with system information.</td>
</tr>
<tr>
<td>Static switch</td>
<td>Electronic switch ensuring instantaneous switching.</td>
</tr>
</tbody>
</table>
### 6. Appendix

#### 6.4 Index

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