STATIC TRANSFER SWITCH

Tescom


AR-GE MERKEZİ
Tescom

ABOUT

Power Protection Excellence with TESCOM STS Solutions

TESCOM, formerly known as Tümel Elektronik and based in Izmir, Turkey, has been delivering advanced power protection solutions to a broad range of industries since its foundation. Starting with electronic control devices and inverters, the company quickly evolved to meet the growing demand for clean, and reliable energy.

In 2003, TESCOM made a significant breakthrough by producing Turkey's first Static Transfer Switch (STS) and, since 2011, remains the only Turkishmanufacturer of 3-phase STS units. TESCOM STS products have gained strong recognition internationally and are trusted in key facilities of public institutions and private enterprises around the world.

Alongside a wide range of Uninterruptible Power Supplies, TESCOM continues to offer flexible, customer-focused solutions backed by its experienced R&D team and over 290 skilled staff. With more than 300,000 products delivered across 85+ countries, TESCOM stands as a symbol of reliability, innovation and power continuity.

TESCOM operates under the umbrella of DMY Group Companies.
Our customers always feel the collective power of our group companies as well as of our suppliers.

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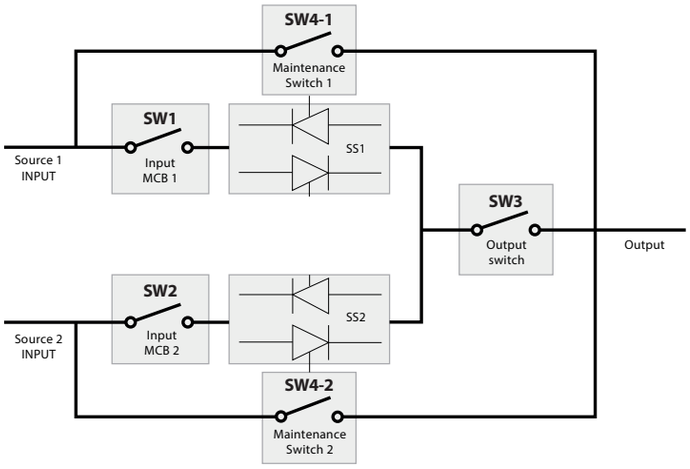
WHAT IS STS ?

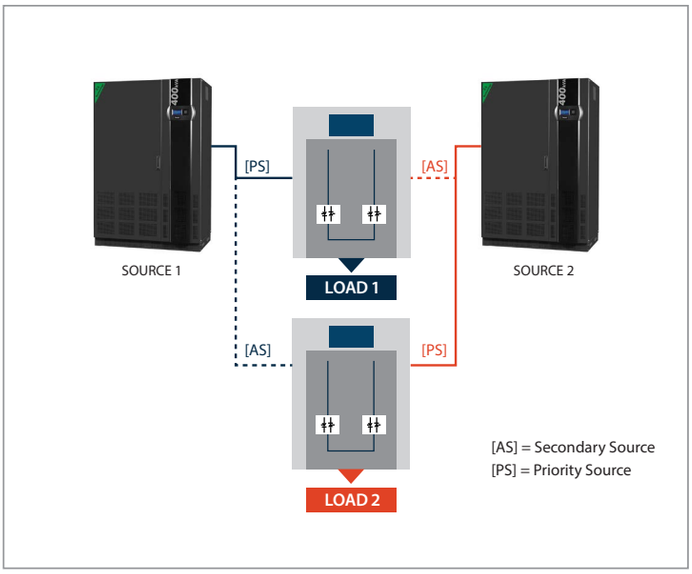
STATIC TRANSFER SWITCH

Tescom STS used for uninterruptible switching between two independent AC power supplies provides the continuity of the load. Switching can also be done automatically when the primary source is out of tolerance or manually by an operator from the front panel/remote. When the primary source returns to normal, it takes the load back on without interruption.

TESCOM STS provides maximum power supply for critical loads in industrial facilities and data centers, providing absolute protection against grid and load failures that may occur.

TESCOM STS may also provide protection against environmental disturbances; e.g.in case of a downstream short circuit, TESCOM STS disconnects the short circuit without affecting the other loads, thus improving the selectivity of protection devices.





ACCESSIBILITY-EASY SERVICE

- Easy front access for replacing moving components and parts
- Easily accessible power cable connections with bottom entry
- Boards placed in a dedicated area for quick diagnosis / replacement
- All parts subject to monitoring, maintenance and/or replacement

MODELS

TESCOM offers 1-phase 2-pole (STS2000), 3-phase 3-pole (STS3000) and 3-phase 4-pole Static Transfer Switches.
1-phase 2-pole STS2000 models have compact and rack type design, also offering hot-swappable option for 32A and 63A models. (STS2032 and STS 2063).

The STS is also available in three-pole and four-pole versions: the number of poles indicates whether the neutral conductor is switched together with the phases (four-pole, STS4000 models) or if the neutral line remains un-switched (three-pole, STS3000 models).

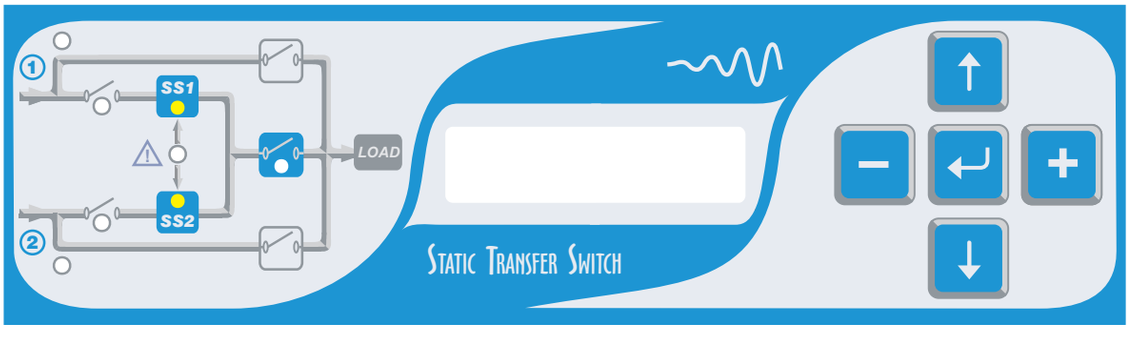
BREAK BEFORE MAKE TRANSFER

The transfer between the two input power sources is always performed using a Break-Before-Make (BBM) mode to guarantee complete separation between the two dierent sources, thus ensuring that they will never be connected in parallel.

In the four-pole models, the neutral conductor is switched using an overlapping method Make-Before-Break (MBB) to prevent any voltage imbalance that could damage the connected loads.

ADVANCED FEATURES

- Full digital control with microprocessor controlled structure, which provides fast and secure switching between power supplies, monitoring of all parameters on the LCD screen, continuous monitoring of the switching process.
- Convenient and multifunctional front panel and diagnostic codes.
- TCP / IP, SNMP, MODBUS and RS232 infrastructure for communication
- Very fast uninterrupted transfer in case of any failure (4ms- for synchronised sources)
- Programmable synchronized and unsynchronized transfers
- Redundant power supplies and circuitry for max. operation reliability.



LED'S FUNCTIONS

L1	Source 1 preferred	L5	Source 1 static switch (SS1) on
L2	Source 2 preferred	L6	Source 2 static switch (SS2) on
L3	Source 1 input	L7	Alarm monitoring
L4	Source 2 input	L8	Output ON/OFF

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STS2000

STATIC TRANSFER SWITCH

1 PHASE, 2 POLES

- COMPACT AND RACK TYPE DESIGN
- MICROPROCESSOR CONTROL
- OPTIONAL HOT-SWAP

RACK

SERVICE / TECH. SUPPORT

ECO FRIENDLY

STS2000 1 phase, 2 pole static transfer switch transfers uninterruptedly critical loads to either of two independent AC power lines. The system monitors two AC inputs. If any of them goes out of the specified tolerance, it transfers the critical load to the other. The STS2000 improves power quality by reducing interference and short interruptions, ensuring continuous backup power availability.

GENERAL SPECIFICATIONS

- Full digital control with microprocessor controlled structure
- 2 AC inputs with 1 phase and neutral switching
- Easy installation and maintenance
- Compact and rack type design
- Wide input voltage range
- "Break Before Make" type transfer
- Very fast uninterrupted transfer even in case of any failure (≤4ms- for synchronised sources)
- Selectable preferred source
- Fuse-free construction with a robust, high reliability SCR
- Digitally controlled system set points
- Programmable synchronized and unsynchronized transfers
- Isolation protection between sources with switched neutral
- Convenient and multifunctional front panel and diagnostic codes
- Transfer inhibit system over a certain current value
- Overload, over temperature and short circuit protections
- Convenience during maintenance and repair with Isolated Maintenance Bypass
- Remote monitoring of energy resources
- TCP / IP, SNMP, MODBUS and RS232 infrastructure for communication
- Dry-contact interface
- Internal cooling fans
- Optional external AC power supply socket outlet
- Optional SNMP adaptor

TECHNICAL SPECIFICATIONS

MODEL	STS2032	STS2063	STS2120
Nominal current	32 A	63 A	120 A
ELECTRICAL			
Input voltage	220/230/240 VAC 1P + N + G		
Input voltage range	180-264 VAC (Ph-N)		
Input frequency	50Hz. / 60Hz.		
Input frequency range (operation range adjustable)	46-54Hz (for 50Hz)		
	56-64Hz (for 60Hz)		
Transfer type	"Break before make"		
Transfer methods available	Automatic / Manual / Remote		
Transfer control	Synchronised		
	With adjustable delay (non-synchronised)		
	Zero current (non-synchronised)		
Transfer time	≤ 4 ms for synchronous sources		
	≤ 10 ms for non-synchronous sources		
Switching type	1 phase + Neutral switching (2-Poles)		
Output current crest factor	3:1		
Admissible overload	0-100% continuous		
	101-150% 1 minute		
	151-200% 10 seconds		
	> 200% 250 msec		
Protections	Output overload and short circuit protection, Overtemperature protection, Backfeed protection		
LCD panel and mimic	Standard		
Communication	RS232 standard, RS485 optional, SNMP optional		
TCP/IP connection	Optional		
Dry contacts	3 programmable relay outputs		
Breaking current capacity (SW1,SW2)	10kA		
ENVIRONMENTAL			
Cooling	Forced cooling (redundant fans)		
Cooling air direction	From front to rear		
Operating temperature	0°C - 40°C		
Storage temperature	-10°C up to +50°C		
Relative humidity	90% max. (non-condensing)		
Protection degree	IP20		
Standards	EN62310-1, EN62310-2		
Max. operation height	1000m. at nominal current rating		
Acoustic noise	< 50 dBA		< 52 dBA
MECHANICAL			
Weight (kg)	12	13	20
Dimensions	2U (19"rack), Width = 485mm, Depth = 545mm		3U (19"rack), Width = 485, Depth = 605mm
	2U (19”rack), Width = 485mm, Depth = 590mm (hot-swap)		3U (19”rack), Width = 485, Depth = 645mm (hot-swap)
Power cables connection	Clip-on terminals (on the rear panel)		

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STS3000-4000

STATIC TRANSFER SWITCH

3 PHASE, 3&4 POLES

- VERY FAST UNINTERRUPTED TRANSFER
- ADVANCED COMMUNICATION
- MICROPROCESSOR CONTROL
- CHASSIS TYPE OPTION (*)

TOWER

SERVICE / TECH. SUPPORT

ECO FRIENDLY

STS3000-4000 3 phase, 3&4 pole static transfer switch transfers uninterruptedly critical loads to either of two independent AC power lines. The system monitors two AC inputs. If any of them goes out of the specified tolerance, it transfers the critical load to the other. By increasing the energy quality of the systems used with STS3000-4000, while reducing the effects of interference and short interruptions, a backup power system is gained.

(*) Some range of TESCOM three or four-pole STSs are also available in chassis version. They are mainly used as building blocks in power distribution systems. They do not have protection equipment and cabinet covers on the unit but they are mainly used for uninterruptuble transfer between alternative AC power sources.

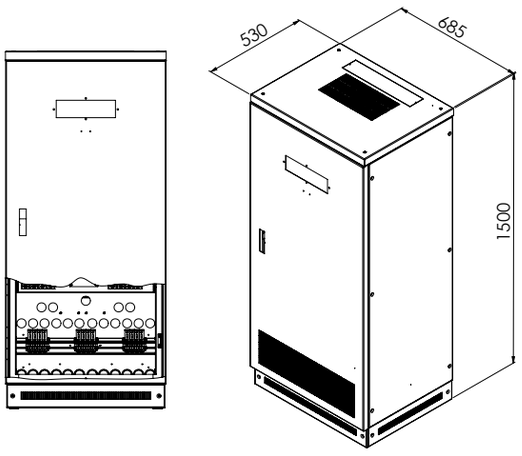
GENERAL SPECIFICATIONS

- Full digital control with microprocessor controlled structure
- 2 AC inputs with 3 phase switching
- Easy installation and maintenance
- Compact design
- Wide input voltage range
- "Break Before Make" type transfer
- Very fast uninterrupted transfer even in case of any failure (≤4ms- for synchronised sources)
- Selectable preferred source
- Fuse-free construction with a robust, high reliability SCR
- Digitally controlled system set points
- Programmable synchronized and unsynchronized transfers
- Convenient and multifunctional front panel and diagnostic codes
- Transfer inhibit system over a certain current value
- Overload, over temperature and short circuit protections
- Convenience during maintenance and repair with Isolated Maintenance Bypass
- Remote monitoring of energy resources
- TCP / IP, SNMP, MODBUS and RS232 infrastructure for communication
- Dry-contact interface
- Internal cooling fans
- Optional external AC power supply socket outlet
- Optional SNMP adaptor

TECHNICAL SPECIFICATIONS

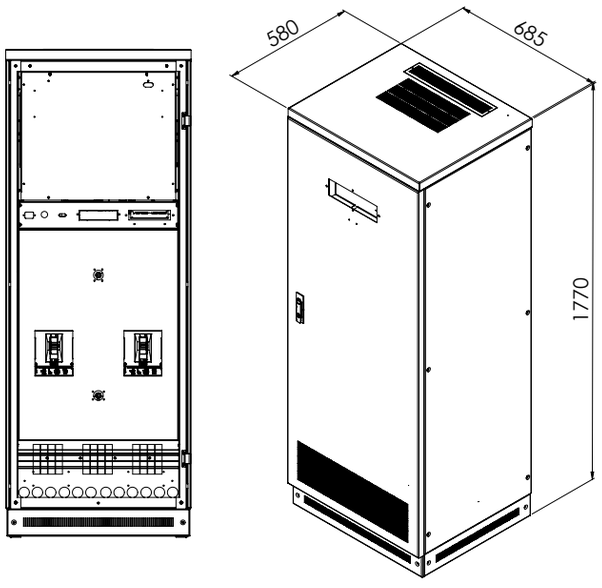
MODEL	STS3050 / STS4050	STS3100 / STS4100	STS3150 / STS4150	STS3200 / STS4200	STS3250 / STS4250	STS3300 / STS4300	STS3400 / STS4400	STS3600 / STS4600	STS30800 / STS40800	STS31000 / STS41000	STS31250 / STS41250
Nominal current	50 A	100 A	150 A	200 A	250 A	300 A	400 A	600 A	800 A	1000 A	1250A
ELECTRICAL											
Input voltage (Ph-Ph)	380/400/415 VAC 3P + N + G										
Input voltage tolerance	180-264 VAC (PH-N)										
Input frequency	50Hz. / 60Hz.										
Input frequency range	48-65Hz (upper and lower limits adjustable)										
Efficiency (at full load)	Up to 99.5%										
Input voltage THD	< 10%										
Transfer type	"Break before make"										
Transfer methods available	Automatic / Manual / Remote										
Transfer control	Synchronised										
	With adjustable delay (non-synchronised)										
	Zero current (non-synchronised)										
Transfer time	< 4 ms for synchronous sources										
	< 10 ms for non-synchronous sources										
Switching type	**3-Pole:** 3-phase switching / **4-Pol**e: 3-phase switching + Neutral switching										
Output current crest factor	3:1										
Admissible overload	0% - 100% continuous										
	101% - 150% 1 min.										
	151% - 200% 10 seconds										
	> 200% 250 msec										
Protections	Output overload and short circuit protection, Overtemperature protection, Backfeed protection, SCR fault protection										
LCD panel and mimic	Standard										
Communication	RS232 standard, RS485 optional, SNMP optional										
TCP/IP connection	Optional										
Dry contacts	4 programmable relay outputs										
Two serial ports	Optional										
Temperature sensor	Standard for internal cabinet temperature										
ENVIRONMENTAL											
Max. installation altitude	1000 m at nominal current rate, (- 1% derate 100m above 1000m)										
Cooling	Forced cooling (redundant fans)										
Operating temperature	0°C - 40°C										
Storage temperature	-10°C - +50°C										
Relative humidity	90% max. (non condensing)										
Protection degree	IP20										
Standards	EN 62310-1, EN 62310-2										
Acoustic noise	< 52 dBA			< 55 dBA				< 60 dBA	< 65 dBA		
PHYSICAL											
Net weight (STS3000)	139	145	165	195 (87)	205 (91)	230 (96)	240 (105)	340	520	565	610
Net weight (STS4000)	160	175	190	205 (90)	235 (95)	240 (100)	255 (110)	375	560	615	660
Dimensions (mm) HxWxD	1500x685x540			1770x685x590 (Chasis type 760x600x545mm)				1905x915x735	1905x1250x850		

* Weights and Dimensions in paranthesis belong to Tescom Chassis-type STSs.



STS3050-STS3100-STS3150
STS4050-STS4100-STS4150

Dimensions (mm) HxWxD: 1500x685x530

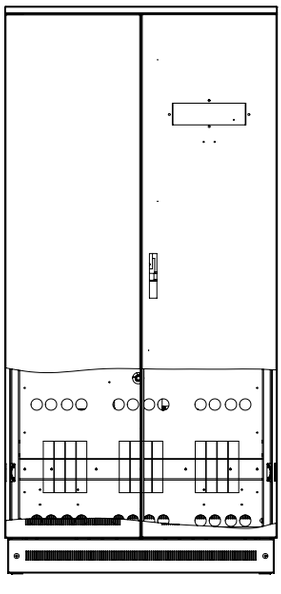


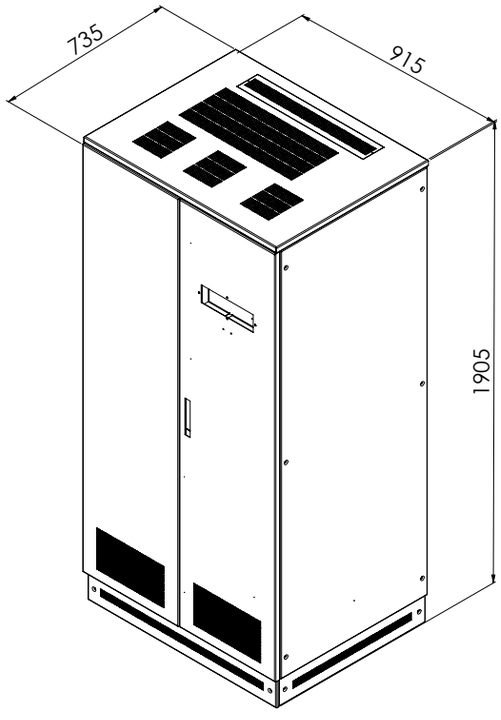
STS3200-STS3250-STS3300-STS3400
STS4200-STS4250-STS4300-STS4400

Dimensions (mm) HxWxD: 1770x685x580

STS3600 - STS4600

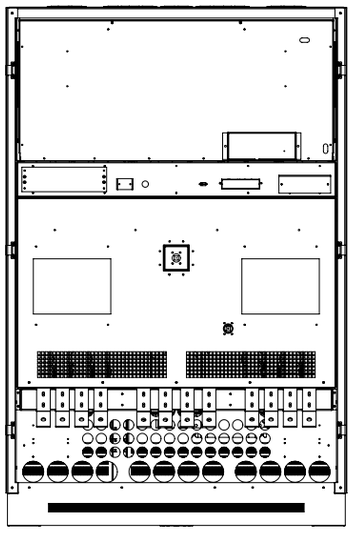
Dimensions (mm) HxWxD: 1905x915x735

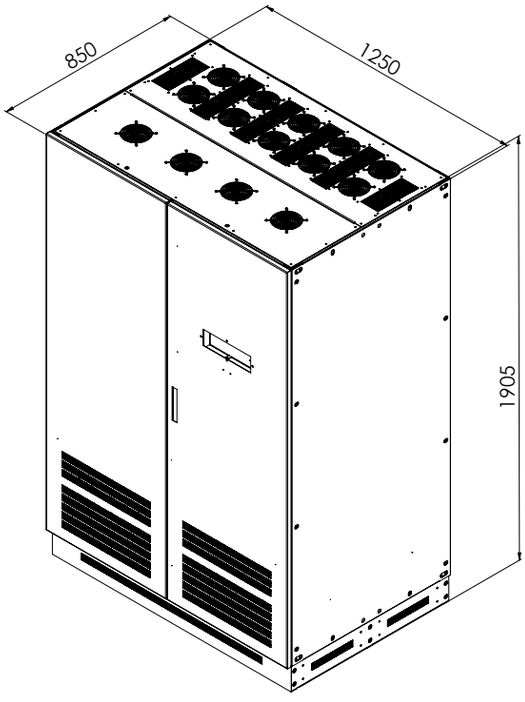




STS30800-STS31000-STS31250 / STS40800-STS41000-STS41250

Dimensions (mm) HxWxD: 1905x1250x850





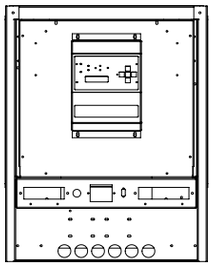
OPTIONS AND ACCESSORIES

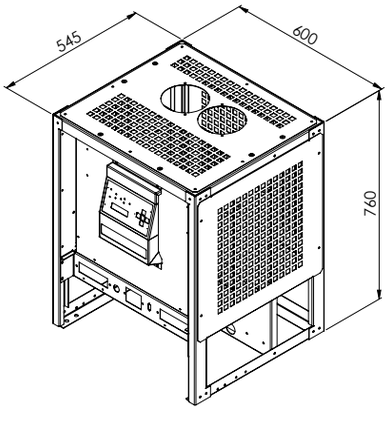
• Power Supply Back-up Kit	• Higher IP Rating Cabinets (IP31, IP42 etc.)
• Neutral Kit Option for STS3000	• Top Entry Cabinets
• Remote Manual Transfer Switch Kit	• Seismic Kit

STS3200R-STS3250R-STS3300R-STS3400R / STS4200R-STS4250R-STS4300R-STS4400R

CHASSIS TYPE STS

Dimensions (mm) HxWxD: 760x600x545





ACCESSORIES

I-COM SERIES UPS and STS ACCESSORIES

MODEL: RSX24

External RS232 to RS485 Converter for UPS and STS

- For long distance communication
- Bi-directional operation
- 4 wire RS485 output
  (Half & full duplex)

MODEL: RS-NET

External RS232 to TCP/IP Converter for UPS and STS

- Monitoring & management
  over TCP/IP

MODEL: ML100

Serial Port Multiplexer for UPS and STS

- RS232 input port
- 2 x DB9 type socket RS232 outputs
- External or internal

MODEL: ML200

Internal Serial Port Multiplexer for UPS and STS

- RS232 input port
- DB9 type socket RS232 output
- RJ45 Ethernet output (TCP/IP)

ACCESSORIES

I-COM SERIES UPS and STS ACCESSORIES

MODEL: MDX2

External MODBUS over RS485 Adaptor for UPS and STS

- For SCADA and BMS connection
- MODBUS RTU protocol
- 2 wire RS485 output
- 8 bit hardware addressable

MODEL: MDX-NET

External MODBUS over TCP/IP Adaptor for UPS and STS

- For SCADA and BMS connection
- MODBUS TCP protocol
- RJ45 Ethernet output
- 8 bit hardware addressable

MODEL: SNMP

Internal SNMP Adaptor for STS

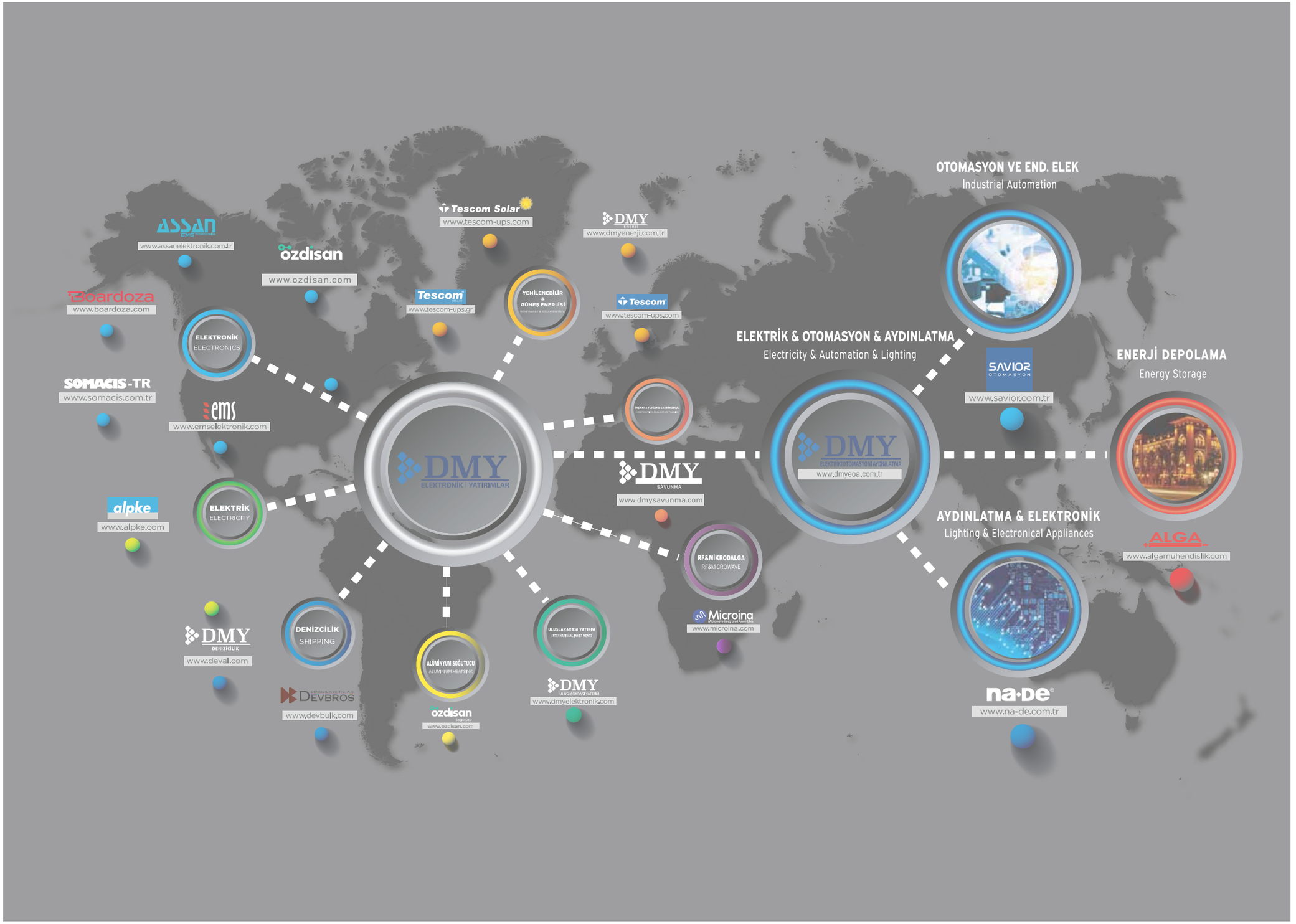
- WEB based monitoring & management
- SNMP management
- Multi server shutdown
- Multi UPS monitoring

*For STS2000

- WEB based monitoring & management
- SNMP management
- Multi server shutdown
- Multi UPS monitoring

*For STS3000 - STS4000

NOTES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