

*Commutatori Statici*  
*Static Transfer Switches*

# - STATIC TRANSFER SWITCHES -

## General features

The contactors Static systems are normally used to ensure continuity of supply towards priority loads, through the automatic transfer of one of the two input lines available.

The choice of the power line is completely automatic and it is managed by the internal electronics with microprocessor control. In case of synchronous sources the switching time is extremely low ( $\leq 2$  mS typical) whereas in case of non-synchronous sources it is forced to 13ms, in order to protect the connected load and avoid output current peaks. In case of commanded switching, the switching time is zero.

Both input lines can be set as main or emergency, in order to be able to reverse the logic of operation on the basis of the plant needs.

Given the extreme reliability, Convel's static switches can be used for any application with a special predisposition to the energy industry, petrochemical industry, computer and telecommunication centres, including the opportunity to be integrated in new and/or existing distribution panels.

### Basic Features

- ❖ Easy and simple installation
- ❖ Rugged and compact
- ❖ Available in 19-inch Rack
- ❖ Available in OEM version (metal plate)
- ❖ Version "MSS" with hot-pluggable and removable power module
- ❖ Available in cabinet
- ❖ Microprocessor logics
- ❖ Protection from overload/short circuits
- ❖ Power modules switching through SCR
- ❖ Redundant Power
- ❖ Wide range of choice in both single and three phase
- ❖ High reliability and efficiency
- ❖ MTBF  $\geq 12$  years
- ❖ Neutral oversized for unbalanced loads (only for three phases)
- ❖ CE marks

### Options Available for Some Versions

- ❖ Serial port RS232/485
- ❖ Ethernet with TCP / IP protocol
- ❖ PROFIBUS o MODBUS interface
- ❖ Remote connection via Bluetooth (OS X only)
- ❖ Mechanical customizing
- ❖ Customized specifications and configuration
- ❖ Manual Bypass (Make-Before-Break type)
- ❖ High speed fuses protection
- ❖ Neutral switched for application in the presence of automatic switches with differential
- ❖ 1 or 2-pole Switching (single-phase version)
- ❖ 3 or 4-pole Switching (three-phase version)
- ❖ Customized alarms



"MSS"-series static switch  
(Available at 110Vac or 230Vac, 20A)



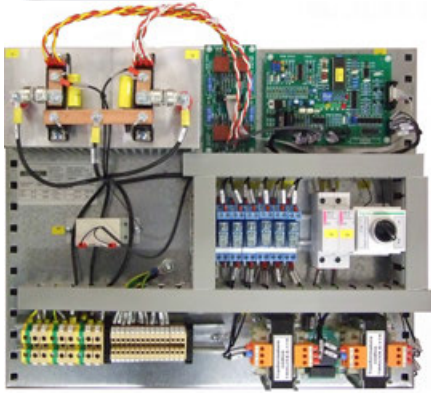
### Alarms and Signalisations

- ❖ All alarms are equipped with voltage-free changeover contact (SPDT)
- ❖ 10A 30V, 5A 230V alarm contact
- ❖ Line 1 Min/Max Voltage Alarm
- ❖ Line 2 Min/Max Voltage Alarm
- ❖ Load powered by Line 1
- ❖ Load powered by Line 2
- ❖ Configurable parameters of intervention (factory)
- ❖ Addition of alarm contacts (on request)

# Static switch data table

	16 A	25 A	32 A	63 A	80 A	100 A	150 A	200 A	250 A	300 A	400 A	500 A	630 A	800/1000 A							
<b>SIZE (Ampere)</b>																					
AC main voltage	110Vac 1ph or 230Vac 1ph or 400Vac 3ph. ±10% - Other on specific request																				
Input Voltage Range	±10%, ±15%, ±20% (Factory Calibrated)																				
AC main frequency	50 or 60Hz ±5Hz																				
Short circuit capability	16/25kA rms @ 400Vac - Other on specific request																				
Switching Pole	1 or 2 for single phase - 3 or 4 for three phase																				
Neutral Connection	Compatible with all available earthing modes																				
Efficiency	99%																				
Charger Control Type	Microprocessor Based with SCR Power Modules																				
Overload capability	1000% one cycle - 125% for 1 hour																				
Power Factor	No limits or restrictions																				
Crest Factor	1:3.5																				
Transfer Time	≤ 5mS (typical 2mS) with synch input lines - 13mS without synch																				
Manual By-Pass	"Make-Before-Break" Type 1ph or 3ph - Only On Request																				
MTBF // MTTR	> 90.000 hours // 1 hour																				
EMC	EN 55022 Class B, EN 60555-2-3 - Other on specific request																				
Protection degree	IP30 - (IP20 Open door) - Other on specific request																				
Operating temperatures	from 0°C up to +40°C (up to 55°C environment with 1% output derating for every °C over 40°C) - Other on specific request																				
Cooling	AN	AN	AN	AN	AN	AN	AN/AF	AN/AF	AN/AF	AF	AF	AF	AF	AF							
Standard Features	Min/Max Voltage Control, Overload Control, Phase & Synch Control																				
Operating R.U.	up to 95% non condensing																				
Operating altitude a.s.l.	up to 1,500m																				
Operating environment	Indoor, industrial but clean environment																				
Colour	Standard: RAL 7035 (Available RAL 7030, RAL 7032) - Other on specific request																				
Access	Standard: front, cable from bottom - Other on specific request																				
Cabinet Steel Type	Standard: Steel Metal Type with Doors & Panels Thickness 2mm (Stainless Steel, Antiseismic upon request)																				
Enclosure Type	19" Rack			19" Rack or Cabinet			Cabinet														
WIDTH dimension	Standard 19" 3U Rack			Standard 19" 4-6U Rack or Cabinet			H 1700 mm			H 1900 mm			H 2100 mm								
DEPTH dimension	15Kg			1,300 x 500 x 400 mm			1500 x 600 x 500 mm			W 600 mm			W 800 mm								
HEIGHT dimension				20Kg or 80Kg			150Kg			D 600 mm			D 600 mm								
Weight	15Kg			20Kg or 80Kg			150Kg			250Kg			300 kg			350 kg			on Request		





OEM static switch  
(On plate)

- ✚ Possibility of technical and mechanical personalization
- ✚ Realization according to customer's technical specifications



100kVA three-phase static switch



Convel's static switches in rack or cabinet

The solution to sinusoidal continuity



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