



Automatic Transfer Switch — TS890

Model Series TS890 — 800 to 3000 AMP

Standard Features

Stored Energy Power Switching Units

- Fully enclosed silver alloy contacts provide high withstand, closing and interrupting rating
- Completely separate utility and generator side switching units provide superior reliability through redundancy (no common parts)
- Switching units may incorporate overcurrent protection, allowing cost savings in upstream devices
- Not damaged if manually switched while in service since contacts operate at same speed as when electrically operated

Reliable Motor-Operated Transfer Mechanism

- Heavy duty brushless motors and operating mechanism provide mechanical interlocking and extreme long life with minimal maintenance
- Safe manual operation with a permanently affixed handles, permits easy operation even under adverse conditions

Control Features

- TSC 800 microprocessor based controller with comprehensive features and state of the art design
- Isolation plug permits disconnection of control circuits from all power sources for safety and convenience of servicing
- Option LEV-3 allows use with dual standby generators or dual utility feeders

Quality Assurance

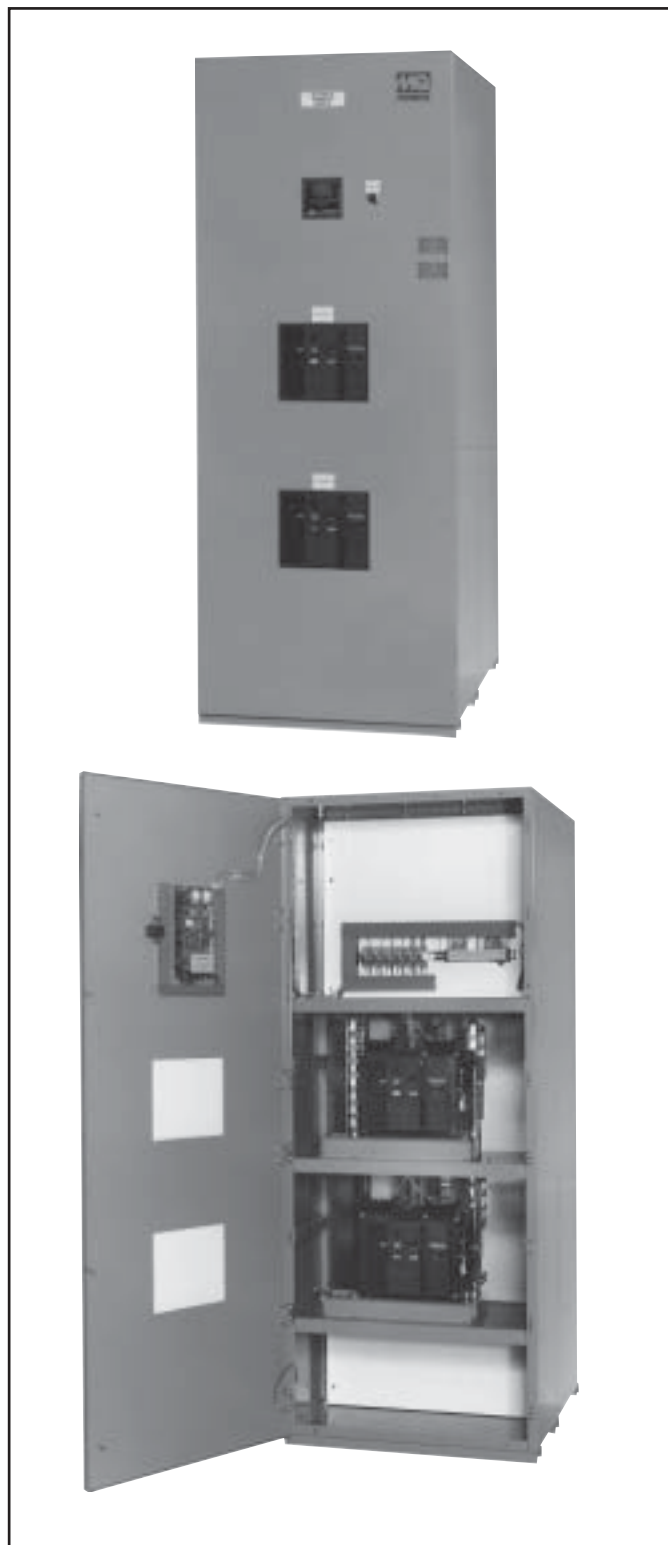
- ISO 9001 Registered
- CSA Z 299.3 (optional)
- DND AQAP-4 (optional)

Compliance

- CSA178
- UL1008
- UL891 Switchgear

Product Data

- Models from 800-3000 Amp continuous
- Available 3 or 4 Pole
- All models 50/60 Hz rated
- Voltage range 208-600
- 3 Phase, 3 or 4 wire systems





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General Description

TYPE A transfer switches are not equipped with internal tripping devices, and require protection provided by upstream protective devices, which must be coordinated. Type A units are suitable for 100% continuous loading, open or enclosed, and fulfill most general applications.

TYPE B transfer switches have internal tripping devices in either or both switching units, which provide the required overload and short circuit protection. Tripping devices can be solid state type. Type B units are suitable for 80% continuous loading, open or enclosed.

The TS890 transfer mechanism employs two heavy duty high capacity stored-energy air circuit breaker switching units. The assembly is suitable for installation in a stand alone enclosure or in a switchgear lineup. Electrical connections can be made using either cable connectors, bus bars or bus duct. The air circuit breakers provide peak withstand ratings and short time withstand ratings which are unattainable with conventional transfer switches, allowing superior system coordination.

By using totally separate switching units for utility and generator supplies, the TS890 transfer switch provides a degree of reliability not available with 'ganged-contactor' type transfer switches. Each unit operates independently of the other, thus providing a redundant path to energize the load. If the 'drawout' feature is provided, it is even possible to perform maintenance on one switching unit while the other remains in service, in many cases eliminating any need for a 'bypass isolation' switch.

Since the switching units have stored-energy contacts (quick make, quick break), the contact opening and closing speed will be the same whether operated electrically (via automatic controls) or manually. This is in contrast to a 'contactor' type transfer switch, without stored-

energy contacts, (the contact speed is proportional to the manual operator handle speed). In this case, contact speed will be very slow, and contact 'teasing' may occur when switched under load potentially damaging the transfer switch.

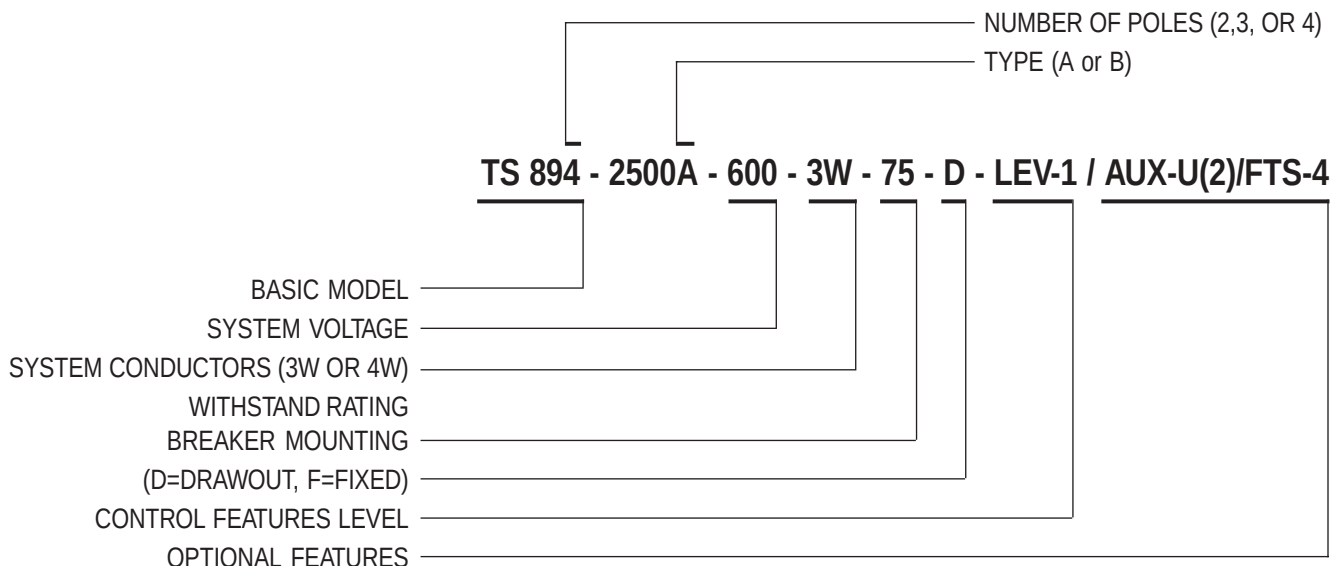
All TS890 transfer switches are equipped with a programmable neutral position delay (NDT) which allows for voltage decay of connected loads such as motors. This will ensure that switching transients are reduced to acceptable levels. Alternatively, a phase controlled transfer, which allows rapid transfer while the two sources are in phase, may be ordered (see option PCT for in-phase transfer).

For special applications where a no-break transfer is required, MQ Power Corp. can provide an uninterrupted power transfer (option UPT). If peak shaving and/or 100% load testing are desired, option PG-UPT is available. This will allow fully automatic uninterrupted load transfer, peak shaving, and load testing up to full capacity (without a load bank).

A bypass isolation feature is available with all TS890 transfer switches. This feature will allow isolation of the transfer switching units, and bypassing of either or both sources to the load. Please request information.

All necessary control functions for fully automatic operation are provided by the TSC 800 microprocessor based controller. The transfer switch controller provides automatic changeover of the load to the generator source in the event of a drop or loss of voltage in any or all phases of the utility supply. Upon restoration of the utility supply, the load is automatically returned. Numerous control features are available as standard or optional accessories to provide the desired sensing, time delay, and switching logic.

Ordering Information



Backfeed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is opened.



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Standard Features

CODE	DESCRIPTIONS
LEV-1*	Program mable/multi-tap system section** Load on utility & load on generator lights c/w lamp test Three phase voltage sensing on utility & generator sources Under/over frequency sensing on generator source (with adjustable time delay) Digital three phase metering of voltage & frequency on utility & generator sources Engine start delay timer, 0 - 60 sec. Engine cooldown delay timer, 0 - 30 min. Engine warm-up timer, 0 - 1800 sec. Transfer to utility timer, 0 - 30 min. Neutral Position Delay, 0 - 60 sec. (allows load voltage decay) Exercise timer 24 hour/7 day On/off load test selectable Programmable function output contact*** Diagnostic LED's Backlit TSC 800 LCD display NEMA 1 enclosure Solid Neutral

** Provided as standard on all TS 890 Automatic Transfer Switches*

*** Excludes TS 850-200 and all 2 pole models*

**** Not available with Level 3 optional features*

Optional Features

CODE	DESCRIPTIONS
LEV-2	Level 2 ATS control package - Level 1 features plus the following: Overvoltage three phase sensor on both utility & generator sources Under/over frequency sensor on utility source (with adjustable time delay)
LEV-3	Level 3 (Dual source) control package - Level 1 features plus the following: Dual Source selector switch Overvoltage three phase sensor - both sources Under/over frequency sensor - both sources
FTS-4	4 Function Test Switch (Auto/Off/Engine Start/Test)
AUX-U	Auxiliary Contact - Utility side (any qty.)
AUX-G	Auxiliary Contact - Generator side (any qty.)
LDC	Generator Pre/Post & Utility Pre/Post Timer contacts (adjustable) for Load Disconnect prior to transfer
OVS	Overvoltage three phase sensor on both utility & generator sources
UOF	Under/over frequency sensor on utility source (with adjustable time delay)
UPA	Utility power available contact
GPA	Generator power available contact
UAL	Utility available light
GAL	Generator available light
FTT	Fail to transfer contact
NSV	Negative Sequence Voltage Relay protects against regenerative voltage from large motors or transformers during single phasing conditions.
SE	Service Entrance Rated
UTR	Overload trip - Utility side (specify rating)
GTR	Overload trip - Generator side (specify rating)
COM	TSC 800 remote communication port for use with external Communication Interface Module (CIM module not included).
CIM	Communication Interface Module* with internal 14.4K baud modem, RS 232/422/485 ports and Modbus™ protocol. One CIM module provides communication interface for up to ten TSC 800 controllers with COM per system.

** Refer to separate literature for additional information. ™ Trademarks belong to their respective parties.*



Automatic Transfer Switch — TS890

Standard Models (Type A)

Basic Model	Maximum Voltage	Rated Current (A)	Short Circuit Current Rating (kA Peak)		Short Circuit Current Rating (kA RMS)	
			Standard	Optional	0.5 Sec.	1.0 Sec.
TS890-800A	600	800	105	143	65	50
TS890-1200A	600	1200	105	143	65	50
TS890-1600A	600	1600	105	143	65	65
TS890-2000A	600	2000	105	165	75	75
TS890-2500A	600	2500	105	165	75	75
TS890-3000A	600	3000	105	165	75	75

Standard Models (Type B)

Basic Model	Maximum Voltage	Rated Current (A)	Short Circuit Current Rating (kA Peak)	Short Circuit Current Rating (kA RMS)	
				0.5 Sec.	1.0 Sec.
TS890-800B	600	800	143	65	50
TS890-1200B	600	1200	143	65	50
TS890-1600B	600	1600	143	65	65
TS890-2000B	600	2000	165	75	75
TS890-2500B	600	2500	165	75	75
TS890-3000B	600	3000	165	75	75

Standard Dimensions/Cable Terminals

Basic Model	Maximum Voltage	Rated Current (A)	Dimensions (inches)			Weight (lbs.)	Terminal Rating ¹ (Copper conductors per phase & neutral)
			Height ²	Depth	Width		
TS890-800A/B	600	800	90	36	36	1150	2 x #2 — 600MCM
TS890-1200A/B	600	1200	90	36	36	1095	3 x #2 — 600MCM
TS890-1600A/B	600	1600	90	42	36	1250	4 x #2 — 600MCM
TS890-2000A/B	600	2000	90	42	36	1400	5 x #2 — 600MCM
TS890-2500A/B	600	2500	90	60	36	1750	6 x #2 — 600MCM
TS890-3000A/B	600	3000	90	60	36	1850	7 x #2 — 600MCM

¹ Optional terminal ratings are available — consult MQ Power

² Does not include base (1.6").

Specifications are subject to change without notice.

Your MQ Power dealer is:

Manufactured by Thomson Technology Inc.



MQ POWER

A DIVISION OF MULTIQUIP INC.
POST OFFICE BOX 6254
CARSON, CA 90749
310-537-3700 • 800-421-1244
FAX: 310-632-2656
E-MAIL: mqpower@multiquip.com
WWW: mqpower.com