



Automatic Transfer Switch — TS850

Model Series TS850 — 100 to 1200 AMP

Standard Features

Molded Case Switching Units

- Fully enclosed silver alloy contacts provide high withstand rating & 100% continuous current rating.
- Completely separate utility and generator side switching units provide superior reliability through redundancy (no common parts), as well as excellent serviceability.
- 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 gearmotor and operating mechanism provide mechanical interlocking and extreme long life with minimal maintenance.
- Safe manual operation with a permanently affixed handle, permits easy operation even under adverse conditions.

Superior Serviceability

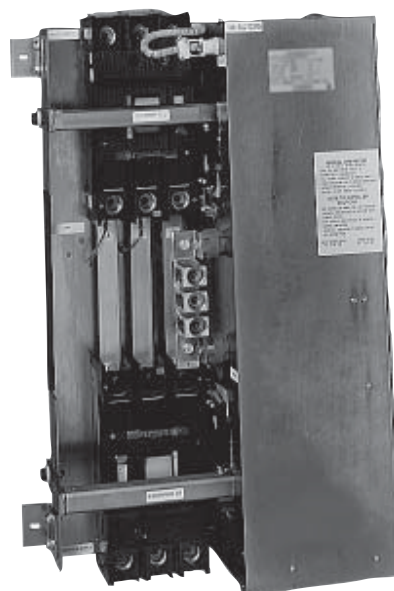
- All mechanical and control devices are visible and readily accessible.
- All control wires and power busses are front accessible — there are no wires or connections which require removal of the transfer switch from its enclosure for servicing.

Quality Features

- TSC 800 microprocessor based controller.
- Isolation plug permits disconnecting control circuits from all power sources for safety and convenience.

Quality Assurance

- ISO 9001 Registered
- UL1008
- CSA178



STYLE "T"
AUTOMATIC TRANSFER SWITCH
400A to 1200A



STYLE "M"
AUTOMATIC TRANSFER SWITCH
100A to 250A

CERTIFIED TO UL 1008 and CSA 178



Automatic Transfer Switch — TS850

General Description

The MQ Power **TS 850** automatic transfer switches employ two non-automatic switches (Type A) or automatic circuit breakers (Type B).

TYPE A transfer switches are not equipped with internal tripping devices, and require protection provided by upstream protective devices, which must be co-ordinated. 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 non-automatic switches, which provide the required overload and short circuit protection. Tripping devices are usually thermalmagnetic type, however sophisticated solid state units are also available, and may be supplied with ground fault protection. (Type B units are suitable for 80% continuous loading, open or enclosed.)

The **TS850** series incorporates two basic styles of transfer switch mechanisms; style "M" which is rated maximum 250 amps, and style "T" which is rated maximum 1200 amps.

The style "M" & "T" transfer mechanisms comprises a power chassis in which the non-automatic switches are mounted, which is barriered from the drive mechanism, interlock assembly and manual handle. The **TSC800** transfer controller is mounted on the door of the transfer switch enclosure. All incoming power connections are made on the power chassis.

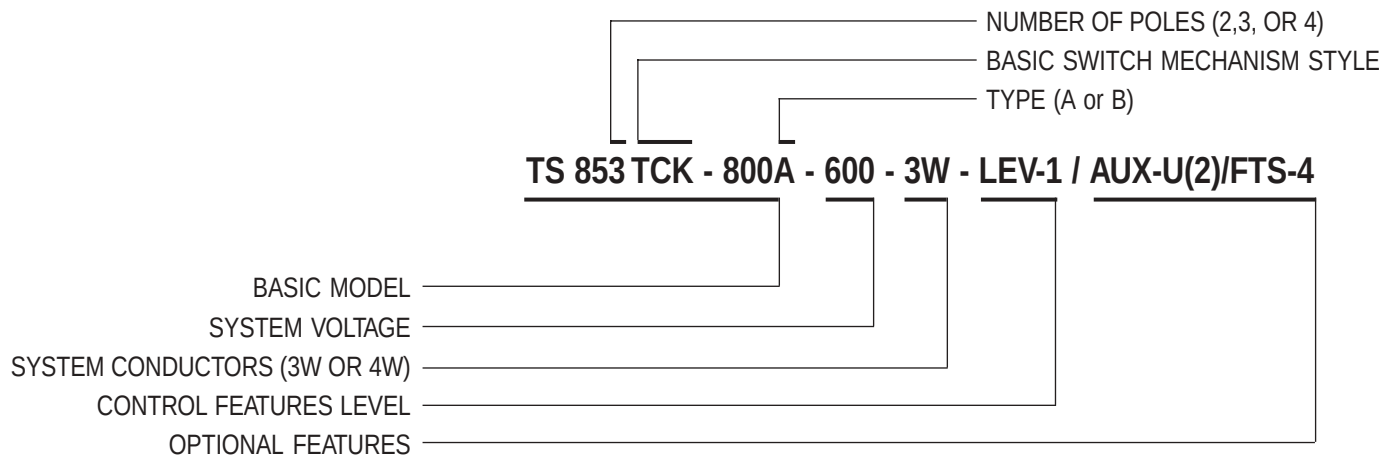
The **TS850** series transfer switches use a type **TSC800** microprocessor based controller. All necessary control functions for fully automatic operation are provided by the **TSC800**. The transfer switch controller provides automatic changeover of the load to the generator source in the event of 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.

The transfer mechanism incorporates a reversible motor, and utilizes power from the source to which the load is being transferred. The mechanism provides positive mechanical interlocking of the two switches, and allows easy manual operation if so desired. Both molded-case switches are "trip free" in the closed position, permitting incorporation of overcurrent trips.

Neutral Position Delay (NDT) is available for use on systems which include motors rated over 100 HP. Neutral Position Delay should be considered when the possibility of out-of-phase reclosing exists between sources, due to residual motor voltage. There is no requirement NDT when employing an MQ Power transfer switch with motors rated 100 HP or less, due to inherent design features. MQ Power transfer switches, with or without NDT, have no need for "in-phase" sensing. Please request full engineering information from MQ Power.

Note: For bypass/isolation options, please contact your MQ Power representative.

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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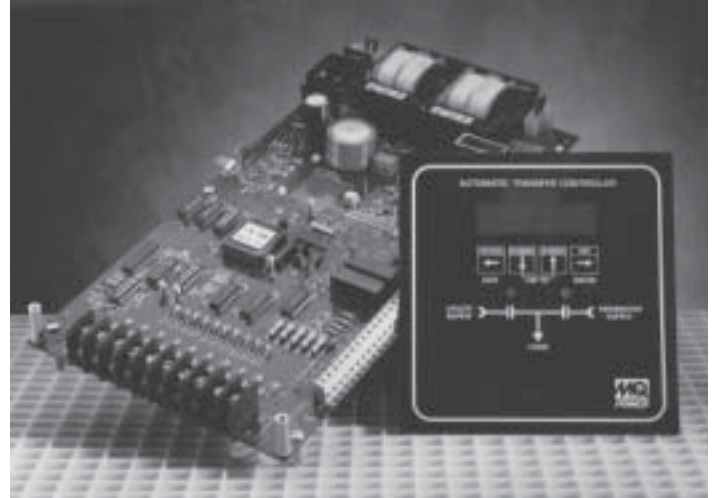
Standard Features

CODE	DESCRIPTIONS
LEV-1*	Programmable/multi-tap system voltage selection** Load on utility & load on generator lights c/w lamp test Three phase voltage sensing on utility & generator sources Under/over frequency sensor 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. Transfer to generator timer 0-30 sec. Neutral Position Delay (allows load voltage decay) Transfer to utility timer 0 - 30 min. 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 850 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 StarUtest)
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.

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Automatic Transfer Switch — TS850

Standard Models

Basic Model	Maximum Voltage	Rated Current (A)	Short Circuit Current Rating [Available Symmetrical Amps (RMS)] ¹				
			With Upstream Circuit Breaker Protection			With Upstream Fuse Protection	
			@240V	@480V	@600V	@ up to 600V	Fuse Type
TS-850-MCE-100	600	100	65,000	25,000	18,000	100,000	T, J
TS-850-MCE-150	600	150	65,000	25,000	18,000	100,000	T, J
TS-850-MCL-250	600	250	65,000	35,000	25,000	100,000	T, J
TS-850-TJC-400	600	400	65,000	35,000	25,000	100,000	T, J
TS-850-6T-CK00	600	600	65,000	35,000	25,000	100,000	T, J
TS-850-TCK-800	600	800	65,000	50,000	35,000	100,000	Consult Factory
TS-850-TS7-1000	600	1000	65,000	50,000	42,000	100,000	Consult Factory
TS-850-TS7-1200	600	1200	65,000	50,000	42,000	100,000	Consult Factory

Enclosure Dimensions

Basic Model	Dimension (in.) ²			Weight (lb.)
	Height	Width	Depth	
TS850-MCE-100/150	37	25	13	143
TS850-MCL-250	37	25	13	155
TS850-TCJ-400	60	30	13	310
TS850-TCJ-600	70	30	13	405
TS850-TCK-800	87	34	13	410
TS850-TS7-1000 ³	76	34	14	410
TS850-TS7-1200 ³	76	34	14	535

Optional NEMA class enclosures available — consult factory.

Cable Terminals

Transfer Switch Rating (A)	Switch Mechanism Type	Terminal Rating ⁴					
		Utility & Generator Supply		Load & Neutral		Type	
		Qty. per Phase	Range	Qty. per Phase	Range	Cu	Al
100, 150	M	1	#4 — 4/0	1	#4 — 4/0	X	X
250	M	1	#1 — 350 MCM	1	#1 — 350 MCM	X	X
400, 600 ³	T	3	250 — 500 MCM	2	2/0 — 500 MCM	X	
		3	250 — 500 MCM	2	4/0 — 500 MCM		X
800 ³	T	3	250 — 600 MCM	3	250 — 600 MCM	X	
1000, 1200 ³	T	4	4/0 — 500 MCM	4	4/0 — 500 MCM	X	X
1600 ²	T	4	#2 — 600 MCM	4	#2 — 600 MCM	X	X

¹ Standard ratings only are shown. Consult MQ Power Corp. for versions using higher short circuit current ratings.

² Enclosure dimensions are for reference. Do not use for construction.

³ 4-pole application dimensions are 90 x 36 x 18

⁴ Optional Terminal Ratings are available in some models — consult factory.

Your MQ Power dealer is:

Manufactured by Thomson Technology Inc.



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