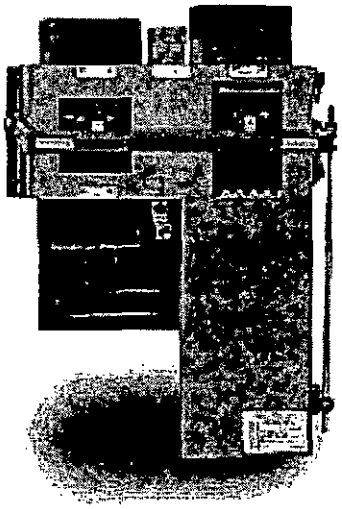
THOMSON TECHNOLOGY®
POWER & CONTROL

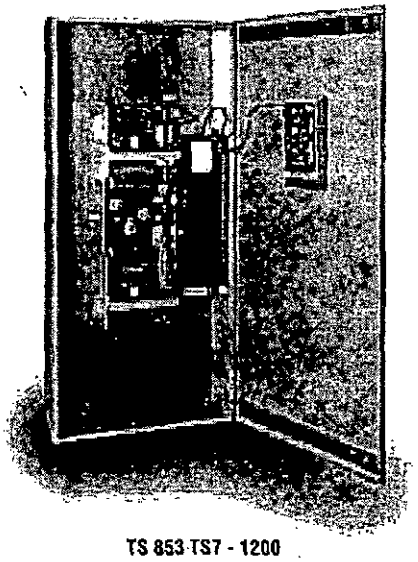
02 • 06 • 01

Model Series TS 850 • 100-1200 AMP

AUTOMATIC TRANSFER SWITCHES



TS 853 MS5 - 250
TRANSFER SWITCH



TS 853 TS7 - 1200
TRANSFER SWITCH

THOMSON TECHNOLOGY TS 850 AUTOMATIC TRANSFER SWITCHES OFFER THE FOLLOWING OUTSTANDING FEATURES:

Enclosed Contact Power Switching Units

- **fully enclosed** silver alloy contacts provide **high withstand** rating & **100% continuous** current rating.
- **3 cycle short circuit current withstand** tested allows use of non-series rated upstream protection devices.
- **completely separate** utility and generator side power switching units provide superior reliability through redundancy (no common parts), as well as excellent serviceability.
- power switching units can incorporate **overcurrent protection**, allowing cost savings in upstream devices.
- **not damaged if manually switched** while in service since contacts have inherent spring over center design.

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.

Control 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
- CSA Z 299.3 (optional)
- DND AQAP-4 (optional)

Certifications

- UL 1008 Automatic Transfer Switch Equipment
- CSA C22.2 No. 178 Automatic Transfer Switches

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GENERAL DESCRIPTION

Thomson Technology TS 850 series of Automatic Transfer Switches employ two mechanically interlocked enclosed contact power switching units and a microprocessor based controller to automatically transfer system load to an alternate supply in the event of a utility supply failure. System load is automatically re-transferred back to the utility supply following restoration of the utility power source to within normal operating limits.

TS 850 Automatic Transfer Switches are specifically designed and certified for use in emergency power system applications such as commercial, industrial, or government institutions that require automatic standby power.

The standard **TS 850** Automatic Transfer Switch is rated for 100% system load and requires upstream overcurrent protection. The **TS 850** design allows optional use of integral overcurrent trip elements within the enclosed contact power switching units thus eliminating the need for external, upstream protective devices.

All **TS 850** series automatic transfer switch models have been 3 cycle short circuit withstand current tested in accordance with UL #1008 & CSA #178 which provide high withstand current ratings and use of non-series rated upstream protective devices.

The design of the **TS 850** operating mechanism provides many standard options to fit a wide variety of system applications such as dual utility feeders, dual prime generators and service entrance.

The inherent spring over center mechanism in the power switching devices allows the operator to manually operate the transfer switch without disconnecting the power source or loads.

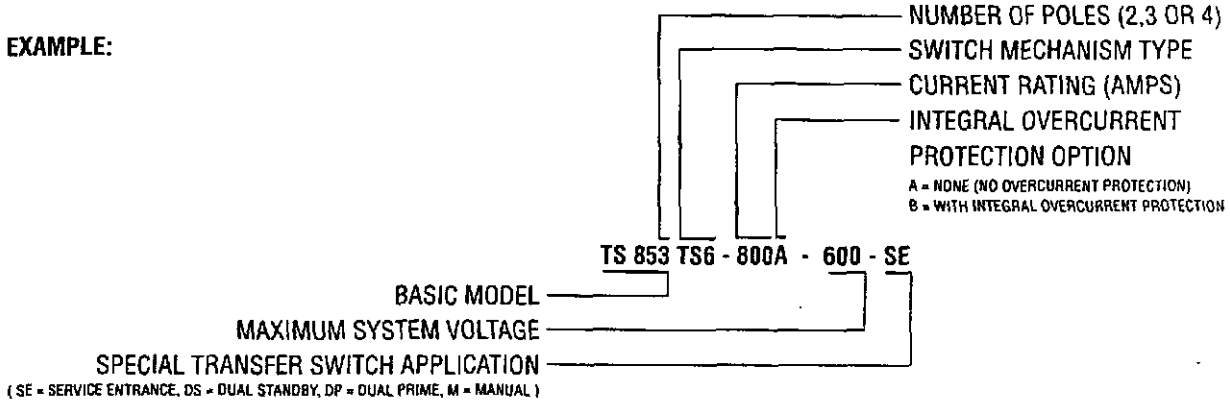
The **TS 850** series automatic transfer switches use a type **TSC 800** microprocessor based controller which provides all necessary control functions for fully automatic operation. The **TSC 800** controller is mounted on the door of the transfer switch enclosure and operating status is shown via LCD display screen. Refer to separate literature for additional information on the **TSC 800** transfer controller.

The standard **TS 850** series automatic transfer switch provides an interrupted "break-before-make" transfer system with an adjustable neutral position delay to ensure adequate voltage decay to prevent out of phase transfers.

Note: For bypass/isolation applications refer to separate TSB brochure

ORDERING INFORMATION

EXAMPLE:



ADDITIONAL ORDERING INFORMATION

- SYSTEM CONDUCTORS (SPECIFY 3 WIRE OR 4 WIRE WITH NEUTRAL)
- TSC 800 CONTROL LEVEL (SPECIFY LEVEL 1,2,3 AS DESCRIBED IN FEATURES LISTING)
- OPTIONAL FEATURES - SPECIFY ALL OPTIONAL FEATURES AS REQUIRED

NOTE: DO NOT LIST STANDARD FEATURES. SHOW QUANTITY FOR AUXILIARY CONTACTS. ENSURE STANDARD CABLE TERMINALS ARE ADEQUATE. (SPECIFY IF OPTIONAL TERMINAL TYPES ARE REQUIRED). STANDARD UNITS ARE RATED 60 HZ. - SPECIFY FOR OTHER FREQUENCIES.

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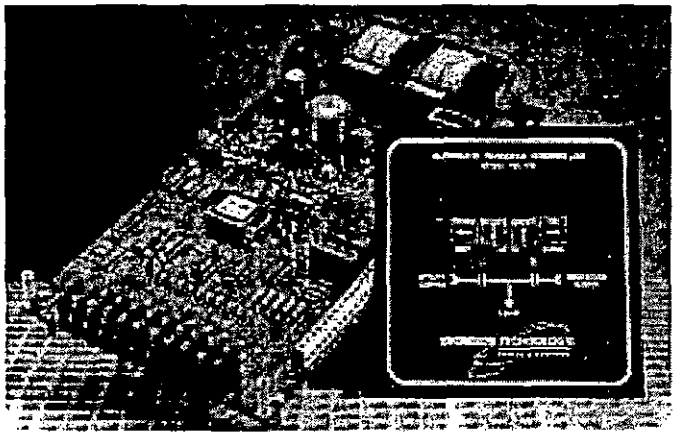
STANDARD FEATURES

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. Engine warm-up timer 0 - 1800 sec. Neutral Position Delay (allows load voltage decay) Utility return 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 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 re-generative 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 (RS422). Can be used in conjunction with external TTI Communication Interface Module* (CIM module not included).
CIM	Communication Interface Module* with internal 14.4Kbaud 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.
VFD	Vacuum fluorescent display for extended low temperature operation (-40° C).

*Refer to separate literature for additional information.

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STANDARD MODELS

BASIC MODEL	MAXIMUM VOLTAGE	RATED CURRENT (AMPS)	WITHSTAND CURRENT RATING AMPS (RMS)				
			With Upstream Circuit Breaker Protection			With Upstream Fuse Protection	
			@240V	@480V	@600V	@ up to 600V	FUSE TYPE
TS 850-MS3 - 100	600	100	65,000	25,000	18,000	100,000	T,J
TS 850-MS3 - 150	600	150	65,000	25,000	18,000	100,000	T,J
TS 850-MS3 - 200	240	200	65,000	N/A	N/A	N/A	T,J
TS 850-MS5 - 250	600	250	65,000	35,000	25,000	100,000	T,J
TS 850-TS6 - 400	600	400	65,000	50,000	35,000	100,000	T,J
TS 850-TS6 - 600	600	600	65,000	50,000	35,000	100,000	T,J
TS 850-TS6 - 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
TS 850-TS7 -1600[1]	600	1600	100,000	50,000	35,000	100,000	Consult Factory

ENCLOSURE SPECIFICATIONS

(NEMA 1, ASA 61 GRAY)

BASIC MODEL	DIMENSIONS (Inches)[3]			SHIPPING WEIGHT
	HEIGHT	WIDTH	DEPTH	(lbs)
TS 850-MS3 - 100 / 150	31	22	13	160
TS 850-MS3 - 200	31	22	13	160
TS 850-MS5 - 250	35	27	13	165
TS 850-TS6 - 400	64	30	13	387
TS 850-TS6 - 600	70	34	13	414
TS 850-TS6 - 800	70	34	13	414
TS 850-TS7 -1000	76	34	13	550
TS 850-TS7 -1200	76	34	13	550
TS 850-TS7 -1600[1]	87	34	13	580

Optional NEMA 2, 3R & 4X class enclosures available — consult Thomson Technology Inc.

CABLE TERMINALS

TRANSFER SWITCH RATING (AMPS)	SWITCH MECHANISM TYPE	TERMINAL RATING[2]	
		QTY PER PHASE	RANGE[4]
100/150	MS3	1	#2 - 4/0
200	MS3	1	#6 - 350 MCM
250	MS5	1	#6 - 350 MCM
400	TS6	2	2/0 - 500 MCM
600	TS6	2	2/0 - 500 MCM
800	TS6	3	2/0 - 500 MCM
1000/1200	TS7	4	4/0 - 500 MCM
1600[1]	TS7	4	#2 - 600 MCM

NOTE: Specifications subject to change without notice.

CL027 Rev.8 02/06/01

[1] IEC only.
[2] Optional Terminal Ratings are available in some models - Consult Thomson Technology Inc.
[3] Enclosure dimensions are for reference. (DO NOT USE FOR CONSTRUCTION).
[4] All cable connections suitable for copper or aluminum.

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