TS 870 - 400 AMP
TRANSFER SWITCH

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Model Series TS 870 • 100 - 1200 Amp

TS870 AUTOMATIC TRANSFER SWITCHES

THOMSON TECHNOLOGY TS 870 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**
- **completely separate** utility and generator side power switching units.
- power switching units can incorporate **over current protection**, allowing cost savings in upstream devices.
- **not damaged if manually switched** while in service.

Reliable Motor-Operated Transfer Mechanism

- **heavy duty** brushless gearmotor and operating mechanism provide mechanical interlocking and extreme long life.
- **safe manual operation** permits operation under adverse conditions.

Superior Serviceability

- all mechanical and control devices are **visible and readily accessible**.
- all control wires and power busses are **front-accessible**.

Control Features

- **TSC 80e** microprocessor based controller with integral front faceplate mounted LCD display.
- **isolation plug** permits disconnecting control circuits from all power sources.

Quality Assurance

- ISO 9001 Registered

Product Data

- Models from 100-1200 Amp continuous
- Available 2, 3 or 4 pole
- All models 50/60Hz rated
- Voltage range 208-600
- 3 phase, 3 or 4 wire systems

Seismic Certification: TS 870 ATS is certified for installation and operation per the following requirements:

- IBC 2006 – Section 13, Occupancy Category IV
- ASCE7-05 Region 3 (minimum S_S=342%)

Safety Standards

- UL 1008 Automatic Transfer Switches for use in Emergency Systems
- CSA C22.2 No. 178 Automatic Transfer Switches

THOMSON TECHNOLOGY 9001 : 2008

A Regal Brand

REGAL

GENERAL DESCRIPTION

STANDARD ATS

Thomson Technology TS 870 Standard Automatic Transfer Switches employ two mechanically interlocked power switching units with a microprocessor based controller to automatically start a generator and transfer system load to a generator supply in the event of a utility supply failure. System load is then automatically retransferred back to the utility supply following restoration of the utility power source to within normal operating limits. All load transfer sequences are "Open Transition" (i.e. "break-before make") with adjustable neutral position delay to ensure adequate voltage decay to prevent out of phase transfers.

TS 870 Automatic Transfer Switches are and certified to CSA 178 & UL 1008 Standards for use in Emergency Power System applications.

All **TS 870** transfer switch models have been 3 cycle withstand current tested in accordance with UL 1008 & CSA 178.

The standard **TS 870** Automatic Transfer Switch is rated for 100% system load. The TS **870** design allows optional use of integral over current trip elements within the power switching units.

All TS 870 series transfer switches use a type **TSC 80e** microprocessor based controller as standard. All necessary control functions for fully automatic operation are provided by the **TSC 80e** transfer controller. The **TSC 80e** controller is mounted on the door of the transfer switch enclosure and operating status is shown via faceplate mounted LCD display and LED lights.

Thomson TS 870 Series ATS are also available in a Manually Initiated configuration without the **TSC 80e** controller but providing Source Availability and Position indication lights with a Source 1/Source 2 selector switch.

SERVICE ENTRANCE ATS

Thomson Technology TS 870 Service Entrance Automatic Transfer Switches incorporate an isolating mechanism and over current protection on the utility supply thereby removing the need to have a separate, upstream circuit breaker/disconnect switch. This unique **Service Entrance Rated Automatic Transfer Switch** design is incorporated into a standard sized automatic transfer switch enclosure.

Standard features of the **Service Entrance Rated Automatic Transfer Switch** include a NEMA 1 rated enclosure, pad-lockable Service Disconnect control switch and status indications.

TS 870 SE Service disconnect operation ensures a high level of safety for system maintenance personnel. Normal operation and performance of the automatic transfer switch is unaffected by the Service Entrance ATS feature. The **TS 870 SE** Automatic Transfer Switch is rated for the system load and requires upstream over current protection on the generator supply.

The **TS 870 SE** series transfer switches use a type **TSC 80e** microprocessor based controller.

WITHSTAND CURRENT RATINGS (ALL MODELS)

BASIC MODEL	MAXIMUM VOLTAGE	RATED CURRENT (AMPS)	WITHSTAND CURRENT RATING AMPS (RMS)[1]				
			With Upstream Circuit Breaker Protection			With Upstream Fuse Protection	
			@240V	@480V	@600V	@ up to 600V	FUSE TYPE
TS 87xA - 0100	600	100	65,000	25,000	18,000	100,000	T,J
TS 87xA - 0150	600	150	65,000	25,000	18,000	100,000	T,J
TS 87xA - 0200	240	200	65,000	N/A	N/A	N/A	T,J
TS 87xA - 0250	600	250	65,000	35,000	25,000	100,000	T,J
TS 87xA - 0400	600	400	65,000	50,000	35,000	100,000	T,J
TS 87xA - 0600	600	600	65,000	50,000	35,000	100,000	T,J
TS 87xA - 0800	600	800	65,000	50,000	35,000	100,000	Consult Factory
TS 87xA - 1000	600	1000	65,000	50,000	42,000	100,000	Consult Factory
TS 87xA - 1200	600	1200	65,000	50,000	42,000	100,000	Consult Factory

[1] Note: For power switching devices equipped with optional overcurrent trip units, standard interrupting ratings are identical to withstand ratings shown at 240V and 480V. For interrupting ratings at 600V, contact Thomson Technology.

ENCLOSURE DIMENSIONS/CABLE TERMINALS

(NEMA 1, ASA 61 GRAY)

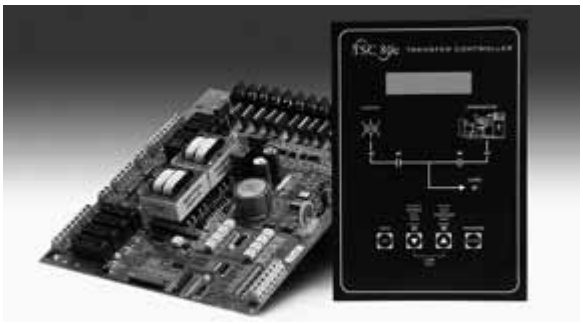
BASIC MODEL	NUMBER OF POLES	DIMENSIONS Inches (mm) [1]			SHIPPING WEIGHT	TERMINAL RATING [3]	
		HEIGHT	WIDTH	DEPTH	lbs (KG)	QTY PER PHASE	RANGE [4]
100A	2,3,4	31.1 (790)	22.3 (566)	14.0 (356)	143 (65)	1	#14 - 1/0
150A	2,3,4	31.1 (790)	22.3 (566)	14.0 (356)	143 (65)	1	#2 - 4/0
200A	2,3,4	31.1 (790)	22.3 (566)	14.0 (356)	143 (65)	1	#6 – 350 MCM
250A	2,3,4	35.1 (892)	27.3 (693)	14.0 (356)	172 (78)	1	#6 – 350 MCM
400A	2,3	43.1 (1095)	34.3 (871)	13.0 (330)	227 (103)	2	2/0 – 500 MCM
400A	4	48.1 (1222)	37.8 (960)	14.5 (368)	256 (116)	2	2/0 – 500 MCM
600A	2,3	46.1 (1171)	36.3 (922)	14.5 (368)	248 (113)	2	2/0 – 500 MCM
600A	4	48.1 (1222)	37.8 (960)	14.5 (368)	256 (116)	2	2/0 – 500 MCM
800A	2,3	48.1 (1222)	37.8 (960)	14.5 (368)	309 (140.4)	3	2/0 – 500 MCM
800A	4	63.1 (1603)	40.8 (1036)	14.5 (368)	367 (167)	3	2/0 – 500 MCM
1000A/1200A	2,3,4	76.0 (1930)	34.3 (871)	14.0 (356)	550 (249)	4	4/0 – 500 MCM

Optional NEMA 3R & 4X class enclosures available — consult Thomson Technology.
For ATS with Distribution Breaker Option contact factory for dimensions.

[1] Enclosure dimensions are for reference. (DO NOT USE FOR CONSTRUCTION)
[3] All cable connections suitable for copper or aluminum
[4] Optional terminal ratings are available in some models – Consult Thomson Technology

STANDARD FEATURES (With TSC 80e Controller)

- LCD Display for monitoring 3 Phase Utility/Generator voltage, system frequency and timer countdown operation
- Front Panel Programming using built-in faceplate mounted pushbuttons & LCD display with password security
- Load on Utility & Load on Generator Lights
- Utility & Generator Source Available Lights
- 3 Phase Voltage sensing on Utility & Generator Sources
- Generator AC frequency sensing
- Utility under voltage control setpoint 70 - 95% (adjustable)
- Generator under voltage control setpoint 70 - 95% (adjustable)
- Generator under frequency control setpoint 70 - 90% (adjustable)
- Engine warm-up timer 0-60 sec. (adjustable)
- Utility return timer 0-30 min. (adjustable)
- Engine start timer 0-60 sec. (adjustable)
- Engine cooldown timer 0-30 min. (adjustable)
- Neutral position delay timer 0-60 sec. (adjustable)
- Load Disconnect Contact (LDC) for pre/post transfer control to signal external building systems such as elevators during transfer operations
- Programmable Generator Exercise Timer (EXT) with easy to use 4 event, 7-14-21-28 Day, On-load or Off-load Programmability
- Real-time clock c/w battery back-up & daylight-savings programming
- Data logging including total transfers to generator, total utility power failures, load on utility hours, load on generator hours and utility or generator voltage/ frequency data at time of fault
- Five user Programmable Output Contacts pre-wired to customer terminal blocks rated 10A, 120/240V resistive, Form C. Each output contact is user programmable to 10 different functions including: Load on Utility, Load on Gen, Load Disconnect Contact



(LDC), Fail to Transfer (FTT), Utility Power Available (UPA), Generator Power Available (GPA), Utility Power Fail, Engine start, ATS Not in Auto, and ATS in Auto. The Transfer Switch is pre-programmed with the following outputs enabled:
  - Load on Utility
  - Load on Gen
  - Load Disconnect Contact (LDC)
  - Fail to Transfer (FTT)
  - ATS Not in Auto
- Local utility power fail simulation test pushbutton & LED
- Remote utility power fail simulation test pushbutton input
- Local plant exercise initiate pushbutton & LED, door mounted
- Engine start contact (10A, 120/240VAC resistive max.)
- Transfer fail/forced transfer logic
- Automatic force transfer to alternate supply should load voltage become de-energized
- 50 or 60Hz capable (115V control power)
- Remote Load Test/Peak Shave Input
- NEMA 1 Enclosure
- Solid Neutral on 4 wire Systems

ORDERING INFORMATION

When placing an order, specify the following 21 digit ATS MODEL CODE as per the features and applications described below.

1	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
T	S	8	7																

1-3. SERIES
TS - TRANSFER SWITCH

4 & 5. MODEL
87 - 870 SWITCH

6. POLES
2 - 2 POLE
3 - 3 POLE
4 - 4 POLE

7. CONFIGURATION TYPE
A - ATS
X - SPECIAL

8 - 11. AMPERAGE
0100
0150
0200
0250
0400
0600
0800
1000
1200

12. APPLICATION
A - STANDARD
B - SERVICE ENTRANCE
X - SPECIAL

13. OPERATION
1 - OPEN TRANSITION
2 - MANUAL ELEC. OP.
X - SPECIAL

14 . SAFETY STANDARDS
A - UL 1008 (Service Entrance)
B - CSA C22.2 NO 178
C - UL1008 / CSA 178
X - NOT APPLICABLE

15 . VOLTAGE

1Ø 3 WIRE
D - 120/240

3Ø 4 WIRE (GROUNDED NEUTRAL)
E - 120/208 [1]
F - 127/220
G - 120/240 [1] (DELTA)
H - 220/380 [2]
S - 230/400 [2]
J - 240/416
K - 254/440
M - 277/480 [1]
N - 347/600 [1]
Y - MULTIVOLTAGE (STOCK SWITCHES ONLY) [1]
Customer to specify voltage when ordering

3Ø 3 WIRE
P - 208
Q - 220
R - 240
U - 416
V - 480
W - 600
X - SPECIAL

16. CONTROLLER
3 - TSC 80e
7 - NONE (MANUAL)

17. ENCLOSURE TYPE
A - NEMA1, ASA #61 GREY
B - NEMA2, ASA #61 GREY
C - NEMA12, ASA #61 GREY
D - NEMA3R SD, ASA #61 GREY
E - NEMA3R DD, ASA #61 GREY
F - NEMA3RX/4X DD (304 STAINLESS STEEL)[3]
G - NONE (OPEN STYLE)
H - NEMA 4X SD (304 STAINLESS STEEL)
K - NEMA 4X SD (316 STAINLESS STEEL)
K - NEMA 3RX/4X DD (316 STAINLESS STEEL)[3]
X - SPECIAL

18. UTILITY SWITCHING DEVICE
K - MOLDED CASE SWITCH (100 - 1200 A)
M- MOLDED CASE SWITCH C/W THER-MAG TRIP (100-200A)
N - MOLDED CASE SWITCH C/W ELECTRONIC TRIP (250-1200A)
P - MOLDED CASE SWITCH C/W ELECTRONIC & GF TRIP (250-1200A)

19. GENERATOR SWITCHING DEVICE
K - MOLDED CASE SWITCH (100 - 1200 A)
M - MOLDED CASE SWITCH C/W THER-MAG TRIP (100-200A)
N - MOLDED CASE SWITCH C/W ELECTRONIC TRIP (250-1200A)
P - MOLDED CASE SWITCH C/W ELECTRONIC & GF TRIP (250-1200A)

20. POWER CONNECTIONS
A - STANDARD
X - SPECIAL

21. ATS CONNECTION CONFIGURATION
A - STANDARD
B - ALTERNATE B (1000-1200A)
C - ALTERNATE C (1000-1200A)
D - ALTERNATE D (1000-1200A)

NOTES:
[1] MULTI-VOLTAGE CAPABLE
[2] FOR 50HZ APPLICATION
[3] STANDARD ENCLOSURE RATING IS N3R AT 800A AND ABOVE AND N4 AT 600A AND BELOW.
[4] ONLY AVAILABLE 800A AND ABOVE
[5] 240V MAX

AVAILABLE IN STOCK

Amperage	3 Pole	2 Pole - Option TS 872	Service Entrance Rated ATS	Solid Neutral	Multi-Voltage (Customer to specify 208-600V)	TSC 80e Controller	Nema 1 Enclosure	Nema 3R Enclosure - Option	5 Programmable Output Contacts (10A,120VAC)
100A	●	●		●	●	●	●	●	●
150A	●	●		●	●	●	●	●	●
200A	●	●		●	240V Max	●	●	●	●
250A	●	●		●	●	●	●	●	●
400A	●	●	●	●	●	●	●	●	●
600A	●	●	●	●	●	●	●	●	●
800A	●	●		●	●	●	●	●	●

● Standard
● Available Option in Stock

OPTIONAL FEATURES

(Specify separately from ATS MODEL CODE when ordering)

CODE	DESCRIPTIONS
AUX-G	Auxiliary Contact - Generator side (up to qty. 3)
AUX-U	Auxiliary Contact - Utility side (up to qty. 3)
CED	Custom Engineered Drawings - Project Specific
EAP1601	Transfer to Emergency Annunciator, Alarm Horn & Silence Pushbutton
FTS-4	4 Function Test Switch (Auto/Off/Engine Start/Test)
LCK	Enclosure Lockable Door
TS-H1	Enclosure Strip Heater c/w Thermostat (120VAC External Power Source Required)
TS-H2	Enclosure Strip Heater c/w Thermostat (internally powered from ATS load)
TS-O&M	Additional ATS O & M Manuals (Optional)
TS-STG	Shunt Trip Generator Switch
TS-STU	Shunt Trip Utility Switch
UPA	Utility Power Available Contact

NOTE: Specifications subject to change without notice.

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