



SERIES TS 970 • 100 - 1200 AMP AUTOMATIC TRANSFER SWITCHES

COMMERCIAL & INDUSTRIAL

REGAL[®]



THOMSON POWER SYSTEMS TS 970 AUTOMATIC TRANSFER SWITCHES OFFER THE FOLLOWING:

POWER CONTACTOR SWITCHING UNITS

- 100% Continuous Current Ratings for use with all load types
- High Short Circuit Withstand Ratings
- Three Position Power Contactor with programmable neutral delay position
- Single Coil Power Contactor Design for reliable operation
- Jumper configurable control voltage. No need to change solenoids
- Electrical and Mechanical Interlocked mechanism prevents simultaneous closure between Utility and Generator sources

SUPERIOR SERVICEABILITY

- Plug-in Control Devices allow field serviceability
- Enclosed Power Contacts for safe operation and maintenance
- All control wires and power cable connections are front accessible
- Plug-in TSC 900 Transfer Switch Controller

CONTROL FEATURES

- TSC 900 microprocessor based controller with 7" color touch screen graphical display and programmable inputs/outputs
- Isolation plug permits disconnecting control circuits from all power sources
- Fast Open Transition with In-Phase Transfer

PRODUCT DATA

- Models from 100 - 1200A continuous current
- 3 or 4 pole
- All models 50/60Hz rated
- Voltage 208 - 480VAC
- 3 phase, 3 or 4 wire systems (3 wire, 480V requires option kit)
- Mechanically interlocked Open Transition
- Rust resistant, Satin-Coated enclosure (galvannealed)

QUALITY ASSURANCE

- ISO 9001 Registered

SEISMIC CERTIFICATION

TS 970 ATS is certified for installation and operation per the following requirements:

- Standards: IBC 2018, ASCE7 - 16, ICCES - AC156 - 2015
- Maximum Design Loads, $S_{DS}(g)=2.5$, $I_p=1.5$, $F_p/W_p=1.88$

SAFETY STANDARDS

- UL 1008 Automatic Transfer Switches for use in Emergency Systems
- CSA C22.2 No. 178 Automatic Transfer Switches
- NFPA 110 Standard for Emergency and Standby Power Systems

WARRANTY

- 2 year limited warranty included

Thomson Power Systems TS 970 Automatic Transfer Switches employ a power contactor switching unit and the TSC 900 controller to automatically start a generator and transfer system load in the event of a utility supply failure. System load is then automatically re-transferred 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 in-phase transfer detection, or with adjustable neutral position delay to ensure adequate voltage decay for preventing out of phase transfers.

TS 970 Automatic Transfer Switches are certified to UL 1008 & CSA 178 Standards for use in Emergency Power System applications.

All TS 970 Transfer Switch models have been 3 cycle withstand current tested in accordance with UL 1008 & CSA 178. Additionally they can withstand 6 times overload for 10 cycles. The standard TS 970 Automatic Transfer Switch is rated for 100% system load. All TS 970 Automatic Transfer Switch utilize the TSC 900 microprocessor based controller which provides all necessary control functions for fully automatic operation. The controller is equipped with 7" color touch screen graphical display which provides operating status and controls. All parameters and configurations are entered without opening the front door.



DUAL SOURCE ATS

Thomson Power Systems TS 970 Dual Source Automatic Transfer Switches control two similar sources of power such as dual utility feeders or dual prime operating generator sets. Upon failure of the preferred operating source, the load will automatically be transferred to the alternate source. System load is then automatically re-transferred back to the preferred operating source following restoration of the power source to within normal operating limits. All load transfer sequences are "Open Transition" (i.e. "break-before-make") with adjustable neutral delay.

Dual Source option is available in three different configurations as follows:

- DU - Dual Utility Sources
- DSG - Dual Standby Generators (Slave ATS)
- DPG - Dual Prime Generators (Prime Power)

TS 970 Dual Source Automatic Transfer Switches are specifically designed and certified to CSA 178 and UL 1008 Standards.

All TS 970 DS Transfer Switch models have been 3 cycle withstand current tested in accordance with UL 1008 and CSA 178.

STANDARD FEATURES (With TSC 900 Controller)

- 7" color touch screen graphical display for monitoring 3 Phase Utility/Generator voltage, system frequency and timer countdown operation
- Front Panel Programming using touch screen graphical display with password security
- Load on Utility & Load on Generator indication
- Utility & Generator Source available indication
- 3 Phase Voltage sensing on Utility, Generator, and Load Sources
- Under voltage control setpoint 70 - 95% (adjustable)
- Under frequency control setpoint 70 - 90% (adjustable)
- Engine warmup timer 0-60 min. (adjustable)
- Utility return timer 0-60 min. (adjustable)
- Engine start timer 0-60 sec. (adjustable)
- Engine cooldown timer 0-60 min. (adjustable)
- Neutral position delay timer 0-120 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 event, Calendar Based, On-load or Off-load Programmability
- Real-time clock c/w battery backup & 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
- Eight user Programmable Output Contacts rated 2A, 120/240V resistive, Form C. Each output contact is user programmable for different functions

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
- Remote utility power fail simulation test pushbutton input
- Local plant exercise initiate pushbutton control
- Engine start contact (7A, 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
- Under/Over Frequency Protection - Utility and Generator Sources
- 3 Phase Over Voltage Protection - Utility and Generator Sources
- Phase Sequence and Phase Rotation Protection between Utility and Generator Sources
- Voltage Phase Loss/Unbalance Protection
- Programmable Inputs (Quantity 16 Digital Input-voltage free input)
- RS232 Modbus™ Remote Communication Port (Modbus™ Serial RTU) via GHC
- Optional Ethernet Modbus Remote Communication Port (Modbus™ TCP) via GHC
- Serviceable Plug-in Connectors
- Event Logging (Time/Date Stamping)

WITHSTAND CURRENT RATINGS (ALL MODELS)

MODEL	RATED CURRENT (AMPS)	MAX VOLTAGE (VAC)	WITHSTAND CURRENT RATING AMPS (RMS) ¹			
			WCR 50mS (RMS SYM)	WCR 17mS (RMS SYM)	SPECIFIC BREAKER (RMS SYM)	WCR HRC FUSE (RMS SYM)
TS 973A0100A	100A	480	5,000	5,000	35,000	200,000
TS 973A0150A	150A	480	14,000	14,000	65,000	200,000
TS 973A0200A	200A	480	14,000	14,000	65,000	200,000
TS 973A0250A	250A	480	14,000	14,000	65,000	200,000
TS 973A0400A	400A	480	14,000	14,000	65,000	200,000
TS 973A0600A	600A	480	35,000	85,000	200,000	200,000
TS 973A0800A	800A	480	42,000	100,000	100,000	200,000
TS 973A1000A	1000A	480	42,000	100,000	100,000	200,000
TS 973A1200A	1200A	480	50,000	100,000	100,000	200,000

¹ Refer to product O&M Manual for complete list of circuit breakers.

ENCLOSURE DIMENSIONS/CABLE TERMINALS (ATS ONLY) (NEMA 1, ASA #61 GRAY)

AMPERAGE	No. OF POLES	NEMA DIMENSIONS ¹			SHIPPING WEIGHT lbs (kg)	TERMINAL RATING ²	
		HEIGHT INCHES (mm)	WIDTH INCHES (mm)	DEPTH INCHES (mm)		QTY (PER PHASE)	RANGE
100A	3	31.15" (800)	22.15" (572)	12.0" (305)	114 lbs (52)	1	#6 - 300 mcm
100A	4	31.15" (800)	22.15" (572)	12.0" (305)	124 lbs (56)	1	#6 - 300 mcm
150A	3	31.15" (800)	22.15" (572)	12.0" (305)	140 lbs (64)	1	#6 - 300 mcm
150A	4	39.2" (996)	26.15" (664)	12.5" (318)	148 lbs (67)	1	#6 - 300 mcm
200A	3	31.15" (800)	22.15" (572)	12.0" (305)	140 lbs (64)	1	#6 - 300 mcm
200A	4	39.2" (996)	26.15" (664)	12.5" (318)	148 lbs (67)	1	#6 - 300 mcm
250A	3	39.2" (996)	24.15" (613)	12.5" (318)	170 lbs (77)	1	#6 - 300 mcm
250A	4	39.2" (996)	26.15" (664)	12.5" (318)	175 lbs (80)	1	#6 - 300 mcm
400A	3	39.2" (996)	24.15" (613)	12.5" (318)	170 lbs (77)	2	4/0 - 500 mcm
400A	4	39.2" (996)	26.15" (664)	12.5" (318)	175 lbs (80)	2	4/0 - 500 mcm
600A	3	73.58" (1869)	29.2" (742)	28.08" (713)	638 lbs (289)	4	#4 - 600 mcm
600A	4	73.58" (1859)	29.2" (739)	28.08" (713)	657 lbs (298)	4	#4 - 600 mcm
800A	3	73.58" (1869)	29.2" (742)	28.08" (713)	638 lbs (289)	4	#4 - 600 mcm
800A	4	73.58" (1859)	29.2" (739)	28.08" (713)	657 lbs (298)	4	#4 - 600 mcm
1000A	3	73.58" (1869)	29.2" (742)	28.08" (713)	638 lbs (289)	4	#4 - 600 mcm
1000A	4	73.58" (1869)	29.2" (739)	28.08" (713)	657 lbs (298)	4	#4 - 600 mcm
1200A	3	73.58" (1869)	29.2" (742)	28.08" (713)	673 lbs (305)	4	#4 - 600 mcm
1200A	4	73.58" (1869)	29.2" (739)	28.08" (713)	697 lbs (316)	4	#4 - 600 mcm

Optional NEMA 3R class enclosures available — consult Thomson Power Systems.

¹ Enclosure dimensions are for reference (NOT FOR CONSTRUCTION). 100A - 400A mounting flanges not included in overall dimensions

² All cable connections suitable for copper or aluminum.



ORDERING INFORMATION

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

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
T	S		9	7																	

1-3. SERIES

TS - TRANSFER SWITCH

13. OPERATION TYPE

1 - OPEN TRANSITION

16. CONTROLLER

5 - TSC 900 c/w GHC Graphic Display

4 & 5. MODEL

97 - 970 SWITCH

14. SAFETY STANDARDS

C - UL 1008 / CSA 178

17. ENCLOSURE TYPE

A - NEMA 1, ASA #61 GRAY

D - NEMA3R SD, ASA #61 GRAY

6. POLES

3 - 3 POLE

4 - 4 POLE

15. VOLTAGE⁴

1 ϕ 3 WIRE

D - 120/240¹

18. UTILITY SWITCHING DEVICE

J - POWER CONTACTOR

7. CONFIGURATION TYPE

A - ATS

3 ϕ 4 WIRE (GROUNDED NEUTRAL)

E - 120/208¹

F - 127/220¹

G - 120/240¹ (DELTA)

H - 220/380^{1,2}

S - 230/400^{1,2}

J - 240/416¹

K - 254/440¹

M - 277/480¹

Z - MULTIVOLTAGE (STOCK SWITCHES ONLY)¹

19. GENERATOR SWITCHING DEVICE

J - POWER CONTACTOR

8 - 11. AMPERAGE

0100

0150

0200

0250

0400

0600

0800

1000

1200

20. POWER CONNECTIONS

A - STANDARD

21. ATS CONNECTION CONFIGURATION

A - STANDARD

12. APPLICATION

A - STANDARD

3 ϕ 3 WIRE

P - 208

Q - 220

R - 240

V - 480³ (DELTA OPTION)

NOTES

¹ MULTI-VOLTAGE CAPABLE (208 - 480V)

² FOR 50 Hz APPLICATION

³ REQUIRES OPTION KIT

⁴ 208V-240V MUST BE AVAILABLE PHASE TO PHASE

AVAILABLE IN STOCK

The following standard ATS models are available from stock:

AMPERAGE	3 POLE	SOLID NEUTRAL	TSC 900 CONTROLLER	NEMA 1 ENCLOSURE	NEMA 3R ENCLOSURE OPTION	8 PROGRAMMABLE OUTPUT CONTACTS (2A, 240VAC)	MODBUS™ RTU REMOTE COMM. PORT (SERIAL RS 232)
100A	Standard	Standard	Standard	Standard	Available Option in Stock	Standard	Standard
150A	Standard	Standard	Standard	Standard	Available Option in Stock	Standard	Standard
200A	Standard	Standard	Standard	Standard	Available Option in Stock	Standard	Standard
250A	Standard	Standard	Standard	Standard	Available Option in Stock	Standard	Standard
400A	Standard	Standard	Standard	Standard	Available Option in Stock	Standard	Standard
600A	Standard	Standard	Standard	Standard	Available Option in Stock	Standard	Standard
800A	Standard	Standard	Standard	Standard	Available Option in Stock	Standard	Standard
1000A	Standard	Standard	Standard	Standard	Available Option in Stock	Standard	Standard
1200A	Standard	Standard	Standard	Standard	Available Option in Stock	Standard	Standard

Standard

Available Option in Stock

OPTIONAL FEATURES (Specify separately from ATS MODEL CODE when ordering)

CODE

DESCRIPTION

AUXILIARIES:

KOTS	Key Operated Test Switch - Auto/Off/Engine Start/Test
PPR-10	Programmable Power Relay Includes 10A Form C Contact Wired to Terminal Block (Up to Qty 3). Requires 24Vdc External Control Power

COMMUNICATION:

EMB-TCP/IP	Ethernet Modbus™ Remote Communication Port (Modbus™ TCP) via GHC
RS485A	RS 232 to RS 485 Remote Communication Adapter
THS 900	Remote Communication Application - Windows Based * Requires EMB-TCP/IP Option
RA 900	Remote Annunciator (refer to separate literature)

ENCLOSURE:

GHC-SS	Sunshade for GHC Screen
LCK	Pad 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)

FUNCTION:

LDS	Load Shed, 4 Stage *Requires LPM and CTK Option, available from 100A - 400A
480VDELTA	Field Modkit to add Control Transformers for 480V Delta Systems without Neutral Connection (3 Phase, 3 Wire)
DU	Dual Utility Control Package
DSG	Dual Standby Generator Control Package (Slave ATS). Requires 24DCC Option to Power TSC 900
DPG	Dual Prime Generator Control Package

METERING:

LPM	Transfer Switch Load Power Metering CT Kit (Amp, Volt, Freq, kW, kVA, PF) **Requires CT Kit
CTKxxxx	Current Transformer Kit for LPM (xxxx -Specify CT Size 0100, 0150, 0250, 0400)

POWER:

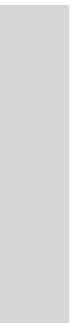
24DCC	24 Volt DC-DC Converter, Regulated
SPD	Surge Protection Device

OTHER:

3YR	Additional 12 Month Parts & Labour Warranty
5YR	Additional 36 Month Parts & Labour Warranty



NOTES:





Thomson Power Systems

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NOTE: Specifications subject to change without notice.

APPLICATION CONSIDERATIONS

The proper selection and application of power generation products and components, including the related area of product safety, is the responsibility of the customer. Operating and performance requirements and potential associated issues will vary appreciably depending upon the use and application of such products and components. The scope of the technical and application information included in this publication is necessarily limited. Unusual operating environments and conditions, and other factors can materially affect the application and operating results of the products and components and the customer should carefully review its requirements. Any technical advice or review furnished by Regal Beloit America, Inc. and its affiliates with respect to the use of products and components is given in good faith and without charge, and Regal assumes no obligation or liability for the advice given, or results obtained, all such advice and review being given and accepted at customer's risk.

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