



SERIES TS 870 • 100 - 1200 AMP AUTOMATIC TRANSFER SWITCHES

COMMERCIAL & INDUSTRIAL

REGAL[®]

THOMSON POWER SYSTEMS TS 870 AUTOMATIC TRANSFER SWITCHES OFFER THE FOLLOWING:

ENCLOSED CONTACT POWER SWITCHING UNITS

- Fully enclosed silver alloy contacts provide high withstand rating & 100% continuous current rating
- 3 cycle short circuit current withstand
- 10 cycle 6X overload current rating
- Completely isolated 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 (for open transition ATS) and extreme long life
- Stored Energy: Motor Operators for fast CTTS
- Safe manual operation permits operation under adverse conditions

SUPERIOR SERVICEABILITY

- All mechanical and control devices are visible and front accessible
- All control wires and power busses are front accessible
- Plug-in TSC 7320 Transfer Switch Controller

CONTROL FEATURES

- TSC 7320 microprocessor based controller with 2.3" back-lit LCD display and programmable inputs/outputs
- Isolation plug permits disconnecting control circuits from all power sources

PRODUCT DATA

- Models from 100 - 1200A continuous current
- Available 2, 3 or 4 pole
- All models 50/60Hz rated
- Voltage range 120 - 600VAC
- 3 phase, 3 or 4 wire systems
- Open Transition or Closed Transition ATS
- 1000/1200A offer fast Open Transition transfer, within-phase monitoring

QUALITY ASSURANCE

- ISO 9001 Registered

SEISMIC CERTIFICATION

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

- IBC 2012 – Section 13, Occupancy Category IV
- ASCE7 - 05 Region 3 (minimum SS=200%)

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 870 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 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 adjustable neutral position delay to ensure adequate voltage decay for preventing out of phase transfers.

TS 870 Automatic Transfer Switches are certified to UL 1008 & CSA 178 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. Additionally, they can withstand 6 times overload for 10 cycles. 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 Automatic Transfer Switches use a TSC 7320 microprocessor based controller which provides all necessary control functions for fully automatic operation. The controller is equipped with 2.3" back-lit LCD display which provides operating status and controls. All parameters and configurations are entered without opening the front door.



CLOSED TRANSITION ATS (MOMENTARY)

Note: TS870 400 to 800A, closed transition ATS is implemented using the TS870 with TSC900 controller. Refer to TS870 Commercial & Industrial ATS datasheet CL062 for details.

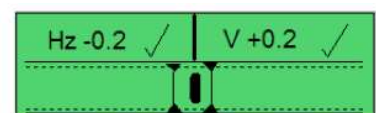
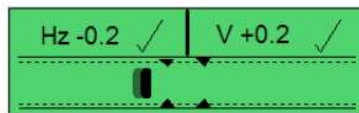
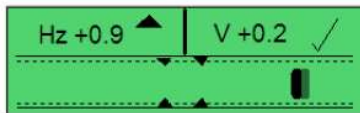
Thomson Power Systems TS 870 Closed Transition Transfer Switch (1000A - 1200A CTTS) employs two stored energy, motor operated electrically interlocked molded case (MCCB/MCS) power switching units and a microprocessor based controller to automatically allow a Closed Transition ("make-before-break") load transfer when both utility and generator sources are available. All Closed Transition transfer sequences ensure both sources of power are in synchronism prior to transfer and load is transferred without power interruption. Automatic control & protection circuits ensure the generator and utility supplies are only in parallel for a maximum of 100ms to permit an uninterrupted load transfer.

In the event of a utility supply failure, the TS 870 CTTS will automatically revert to an Open Transition load transfer sequence to transfer system load automatically to the generator supply. System load is then automatically re-transferred back to the utility supply utilizing a Closed Transition transfer sequence following restoration of the utility power source to within normal operating limits. All Closed Transition transfer sequences will be inhibited when only one source of power is available. The Closed Transition feature is a standard option that can be applied to TS 870 model.

TS 870 CTTS are specifically designed and certified to UL 1008 CTTS Standards, for use in Emergency Power System applications such as Healthcare Commercial, Industrial, or Government Institutions that require automatic standby power and minimal power interruptions to the load.

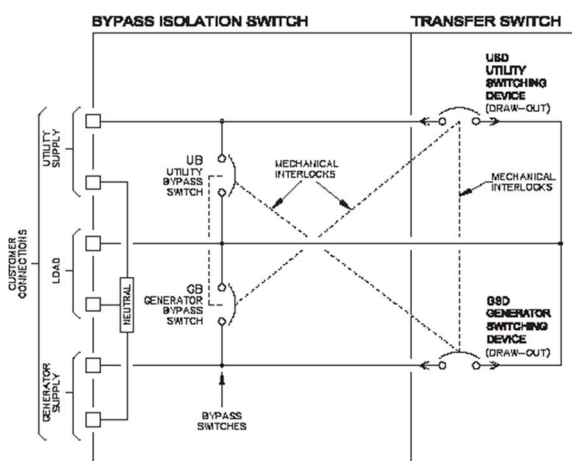
The TS 870 CTTS Transfer Switches use the TSC 7320 controller, with built-in Sync Check relay which contains adjustable voltage differential/slip frequency threshold limits. The paralleling time is less than 100ms. A timer monitors the Closed Transition period, and will isolate, should the Closed Transition time exceed the setting of the timer. If the device fails to open within 100ms an additional Extended Paralleling Protection is provided to ensure isolation by opening the other source within 500ms.

Closed Transition Mode can be bypassed to Open Transition Mode within the TSC 7320 Controller. An Auto/Manual Switch is provided for safe manual operation in Open Transition mode with positive pushbutton controls.





**1000 / 1200A TS870 Bypass,
4 breaker configuration**



**1000A - 1200A Molded Case
Bypass/Isolation Automatic Transfer Switch
TYPICAL SINGLE LINE DIAGRAM**

BYPASS ISOLATION ATS

Note: TS870 400 to 800A 4 Breaker bypass configuration ATS is implemented using the TS870 with TSC900 controller. Refer to the TS870 Commercial & Industrial ATS datasheet CL062 for details.

Thomson Power Systems TS 870 Bypass / Isolation Automatic Transfer Switches employ an interlock power switching mechanism that provides an easy and safe procedure for system maintenance personnel to manually isolate and bypass an Automatic Transfer Switch. The Bypass/Isolation switch is manually operated and allows either generator or utility source to be bypassed to maintain power to the load, while the Automatic Transfer Switch is tested for maintenance procedures as required. The bypass/isolation procedure allows a fast, simple, and reliable method of isolating and bypassing the Automatic Transfer Switch through a "make-before-break" bypass design. The interlocking mechanism ensures that the utility and generator sources cannot be paralleled under any circumstance and the transfer switch may be bypassed to either source.

The TS 870 Bypass/Isolation Automatic Transfer Switch is supplied as a single complete assembly with all power conductors provided between the bypass mechanism and the transfer switch. Provisions for all external power cabling for the utility, generator and load conductors are provided for in the bypass/isolation compartment of the switch. The Bypass/Isolation Switch and Transfer Switch are mounted in separate barriered compartments.

For transfer switches rated 1000A through 1200A using molded case power switching devices, the bypass/isolation mechanism consists of two electrically interlocked power switch devices and draw-out transfer power switching devices. Utilizing independent switching units provides a high degree of both reliability and redundancy not available in other switches.

TS 870 Bypass/Isolation Automatic Transfer Switches are specifically designed and certified to UL 1008 and CSA 22.2 No. 178 Safety Standards.

All TS 870 Bypass/Isolation Automatic Transfer Switch models have been 3 cycle withstand current tested in accordance with UL 1008 and CSA 22.2 No. 178.

The standard TS 870 Bypass/Isolation Automatic Transfer Switch is rated for 100% system load and requires upstream over current protection.

Note: Automatic Transfer Switch units rated 1000A - 1200A utilizing molded case power switching units with a closed transition option may be operated in a "make-before-break" sequence at the operator's direction.

WITHSTAND CURRENT RATINGS (ALL MODELS)

MODEL	RATED CURRENT (AMPS)	MAX VOLTAGE (VAC)	WITHSTAND CURRENT RATING AMPS (RMS) ¹		
			@240V	@480V	@600V
TS 87xA-0100	100A	600	65,000	25,000	18,000
TS 87xA-0150	150A	600	65,000	25,000	18,000
TS 87xA-0200	200A	240	65,000	N/A	N/A
TS 87xA-0250 ²	250A	600	65,000	65,000	35,000
TS 87xA-0400	400A	600	65,000	50,000	35,000
TS 87xA-0600	600A	600	65,000	50,000	35,000
TS 87xA-0800	800A	600	65,000	50,000	35,000
TS 87xA-1000	1000A	600	150,000	100,000	65,000
TS 87xA-1200	1200A	600	150,000	100,000	65,000

¹ Note: For power switching devices equipped with optional over current trip units, standard interrupting ratings are identical to withstand ratings shown at 240V and 480V. For interrupting ratings at 600V, contact Thomson Power Systems.

² Note: Withstand rating specified is for 250A, 3P. For 250A, 4P, the withstand rating are 65KA@240V, 35KA@480V and 22KA@600V

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

AMPERAGE	# OF POLES	DIMENSIONS INCHES (mm) ¹			SHIPPING WEIGHT lbs (kg)	TERMINAL RATING ³	
		HEIGHT	WIDTH	DEPTH		QTY (PER PHASE)	RANGE
100A	2, 3, 4	31.1" (790)	22.3" (566)	14" (356)	143 lbs (65)	1	#14 - 1/0
150A	2, 3, 4	31.1" (790)	22.3" (566)	14" (356)	143 lbs (65)	1	#2 - 4/0
200A	2, 3, 4	31.1" (790)	22.3" (566)	14" (356)	143 lbs (65)	1	#6 - 350 mcm
250A	2, 3, 4	35.1" (892)	27.3" (693)	14" (356)	172 lbs (78)	1	#6 - 350 mcm
400A	2, 3	43.1" (1095)	34.3" (871)	13" (330)	227 lbs (103)	2	2/0 - 500 mcm
400A	4	48.1" (1222)	37.8" (960)	14.5" (368)	256 lbs (116)	2	2/0 - 500 mcm
600A	2, 3	46.1" (1171)	36.3" (922)	14.5" (368)	248 lbs (113)	2	2/0 - 500 mcm
600A	4	48.1" (1222)	37.8" (960)	14.5" (368)	256 lbs (116)	2	2/0 - 500 mcm
800A	2, 3	48.1" (1222)	37.8" (960)	14.5" (368)	309 lbs (140)	3	2/0 - 500 mcm
800A	4	63.1" (1603)	40.8" (1036)	14.5" (368)	367 lbs (167)	3	2/0 - 500 mcm
400A - 800A CTTS	2, 3, 4	64" (1626)	30" (762)	13" (356)	400 lbs (181)	3	2/0 - 500 mcm
1000A/1200A (All)	2, 3, 4	70" (1780)	34.3" (871)	14" (356)	550 lbs (249)	4	4/0 - 500 mcm

¹ Enclosure dimensions are for reference (NOT FOR CONSTRUCTION).

³ All cable connections suitable for copper or aluminum.

⁴ Optional terminal ratings are available in some models – Consult Thomson Power Systems.

Optional NEMA 3R & 4X class enclosures available — consult Thomson Power Systems.

For ATS with Distribution Breaker Option contact factory for dimensions.



ENCLOSURE DIMENSIONS/CABLE TERMINATIONS (ATS with Bypass Switch)

NEMA 1 Standard

AMPERAGE	# OF POLES	NEMA 1 DIMENSIONS INCHES (mm) ¹			SHIPPING WEIGHT lbs (kg)	TERMINAL RATING ³	
		HEIGHT INCHES (MM)	WIDTH INCHES (MM)	DEPTH INCHES (MM)		QTY (PER PHASE)	RANGE
400A	3	80" (2032)	36" (914)	24" (610)	955 lbs	2	#2 - 500 mcm
400A	4	80" (2032)	48" (1219)	22" (559)	1260 lbs	2	#2 - 500 mcm
600A	3	80" (2032)	36" (914)	24" (610)	1075 lbs	2	#2 - 500 mcm
600A	4	80" (2032)	48" (1219)	22" (559)	1340 lbs	2	#2 - 500 mcm
800A	3	80" (2032)	36" (914)	24" (610)	1075 lbs	3	#2 - 500 mcm
800A	4	80" (2032)	48" (1219)	22" (559)	1340 lbs	3	#2 - 500 mcm
1000A	3	80" (2032)	48" (1219)	22" (559)	1415 lbs	4	#4 - 500 mcm
1000A	4	80" (2032)	48" (1219)	22" (559)	1474 lbs	4	#4 - 500 mcm
1200A	3	80" (2032)	48" (1219)	22" (559)	1415 lbs	4	#4 - 500 mcm
1200A	4	80" (2032)	48" (1219)	22" (559)	1474 lbs	4	#4 - 500 mcm

NEMA 3R Option

AMPERAGE	# OF POLES	NEMA 3R DIMENSIONS INCHES (mm) ¹			SHIPPING WEIGHT lbs (kg)	TERMINAL RATING ³	
		HEIGHT INCHES (MM)	WIDTH INCHES (MM)	DEPTH INCHES (MM)		QTY (PER PHASE)	RANGE
400A	3	80" (2032)	48" (1219)	22" (559)	1500 lbs	2	#2 - 500 mcm
400A	4	80" (2032)	48" (1219)	22" (559)	1535 lbs	2	#2 - 500 mcm
600A	3	80" (2032)	48" (1219)	22" (559)	1540 lbs	2	#2 - 500 mcm
600A	4	80" (2032)	48" (1219)	22" (559)	1584 lbs	2	#2 - 500 mcm
800A	3	80" (2032)	48" (1219)	22" (559)	1540 lbs	3	#2 - 500 mcm
800A	4	80" (2032)	48" (1219)	22" (559)	1584 lbs	3	#2 - 500 mcm
1000A	3	80" (2032)	48" (1219)	22" (559)	1555 lbs	4	#4 - 500 mcm
1000A	4	80" (2032)	48" (1219)	22" (559)	1614 lbs	4	#4 - 500 mcm
1200A	3	80" (2032)	48" (1219)	22" (559)	1555 lbs	5	#4 - 500 mcm
1200A	4	80" (2032)	48" (1219)	22" (559)	1614 lbs	5	#4 - 500 mcm

1 Enclosure dimensions are for reference. (DO NOT USE FOR CONSTRUCTION).

2 All cable connections suitable for copper or aluminum.

3 Enclosure depth shown has cable entry/exit location restrictions. Contact Factory for further detailed information.

* Enclosures painted ASA #61 Gray.

STANDARD FEATURES

- 2.3" back-lit LCD text display for monitoring 3 Phase Utility/Generator voltage, system frequency, operation status and alarms
- Five key menu navigation
- Front panel editing with PIN protection
- Customizable status screens
- Load on Utility & Load on Generator indication
- Utility & Generator Source available indication
- 3 Phase Voltage sensing on Utility & Generator Sources
- Generator AC frequency sensing
- Utility under voltage control setpoint 50 - 95% (adjustable)
- Generator under voltage control setpoint 50 - 95% (adjustable)
- Generator under frequency control setpoint 70 - 90% (adjustable)
- Engine warmup timer 0-60 min. (adjustable)
- Utility return timer 0-60 min. (adjustable)
- Engine start (Mains transient) delay timer 0-30 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
- Up to 16 different date and time schedules for On-load or Off-load Generator Exercising
- Real-time clock provides accurate event logging
- Data logging
- Ten outputs total. Two programmable outputs are rated at 2A, 24VDC resistive, two user programmable outputs rated 15A, 24VDC resistive, and one programmable relay output rated at 8A, 250VAC resistive. Remaining contacts are for ATS functionality. The user programmable outputs can be changed to 20 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, ATS Not in Auto, and ATS in Auto.
- The Transfer Switch controller 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 and Remote utility power fail simulation test
- Engine start contact (8A, 120/250VAC resistive max.)
- Automatic force transfer to alternate supply should load voltage become de-energized
- 24VDC control power
- Remote Load Test/Peak Shave Input
- NEMA 1 Enclosure
- Solid Neutral on 4 Wire Systems
- Configurable System Voltage Type (3 wire delta or 4 wire Wye capable without additional sensing transformers)
- ATS Generator Bus Power Metering Capability (Amp, Volt, Freq, kW, kVA, PF)*
- Under/Over Frequency Protection - Utility and Generator Sources
- 3 Phase Over Voltage Protection - Utility and Generator Sources
- Phase Sequence and Phase Rotation Protection for Utility and Generator Sources
- Voltage Phase Loss/Unbalance Protection
- Programmable Inputs (Quantity 8 Digital Input-voltage free input)
- Optional Remote Input module DSE2130 (Quantity 8 Digital inputs)
- Optional Remote Output module DSE2157 (Quantity 8 relay contacts)
- RS485 Modbus Remote Communication Port (Modbus™ Serial RTU)
- Optional Ethernet Modbus Remote Communication Port DSE855 (Modbus™ TCP)
- Optional Remote Annunciator DSE2548
- Support up to Three Remote Display Units DSE2520
- Serviceable Plug-in Connectors



**Power Metering requires Current Transformer Option Kit*



ORDERING INFORMATION

When placing an order, specify the following 20 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

E - DOUBLE BYPASS - 4 BRKR⁹

X - SPECIAL

8 - 11. AMPERAGE

0100

0150

0200⁵

0250

0400

0600

0800

1000

1200

12. APPLICATION

A - STANDARD

B - SERVICE ENTRANCE

C - DUAL UTILITY CONTROL

D - DUAL STANDBY GEN (Slave ATS)

H - DUAL PRIME GEN CONTROL

X - SPECIAL

13. OPERATION TYPE

1 - OPEN TRANSITION

2 - MANUAL ELEC. OP.

3 - CLOSED TRANSITION (MOMENTARY)⁷

X - SPECIAL

14. SAFETY STANDARDS

A - UL 1008 (Service Entrance)

B - CSA C22.2 NO 178

C - UL 1008 / CSA 178

X - NOT APPLICABLE

15. VOLTAGE

1Ø 3 WIRE

D - 120/240

3Ø 4 WIRE (GROUNDED NEUTRAL)

E - 120/208¹

F - 127/220

G - 120/240¹ (DELTA)

H - 220/380²

S - 230/400²

J - 240/416

K - 254/440

M - 277/480¹

N - 347/600¹

Y - MULTI-VOLTAGE (STOCK SWITCHES ONLY)¹
Customer Configurable

3Ø 3 WIRE

P - 208

Q - 220

R - 240

U - 416

V - 480

W - 600

X - SPECIAL

16. CONTROLLER

5 - TSC 900 c/w GHC Graphic Display

6 - TSC 7320 c/w LCD DISPLAY

7 - NONE (MANUAL)

17. ENCLOSURE TYPE

A - NEMA1, ASA #61 GRAY

B - NEMA2, ASA #61 GRAY

C - NEMA12, ASA #61 GRAY

D - NEMA3R SD, ASA #61 GRAY

E - NEMA3R DD, ASA #61 GRAY

F - NEMA3RX/4X DD
(304 STAINLESS STEEL)³

G - NONE (OPEN STYLE)

L - NEMA3RX/4X DD

(316 STAINLESS STEEL)³

X - SPECIAL

18. UTILITY SWITCHING DEVICE

D - MOLDED CASE SWITCH DRAWOUT⁹
(400 - 1200A)

E - MOLDED CASE SWITCH DRAWOUT⁹
C/W ELECTRONIC TRIP (400-1200A)

F - MOLDED CASE SWITCH DRAWOUT⁹
C/W ELECTRONIC TRIP & GF (400-1200A)

K - MOLDED CASE SWITCH (100 - 1200A)

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

D - MOLDED CASE SWITCH DRAWOUT⁹
(400 - 1200A)

E - MOLDED CASE SWITCH DRAWOUT⁹
C/W ELECTRONIC TRIP (400-1200A)

F - MOLDED CASE SWITCH DRAWOUT⁹
C/W ELECTRONIC TRIP & GF (400-1200A)

K - MOLDED CASE SWITCH (100 - 1200A)

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

B - ATS CONNECTION PLATE 100A-400A

C - ATS CONNECTION PLATE 600A-800A

D - ATS CONNECTION PLATE 1000A-1200A

E - ATS CONNECTION PLATE 100A-400A FOR U&G

F - ATS CONNECTION PLATE 600A-800A FOR U&G

G - ATS CONNECTION PLATE 1000A-1200A FOR U&G

X - SPECIAL

21. ATS CONNECTION CONFIGURATION

A - STANDARD

B - ALTERNATE B (400-1200A)

C - ALTERNATE C (400-1200A)

D - ALTERNATE D (400-1200A)

NOTES

¹ MULTI-VOLTAGE CAPABLE

² FOR 50 Hz APPLICATION

³ STANDARD ENCLOSURE RATING IS N3RX
AT 800A, N4X FOR 1000/1200A
AND 600A AND BELOW

⁵ 240V MAX

⁷ CLOSED TRANSITION OPTION 400A - 1200A ONLY

⁹ DOUBLE BYPASS OPTION 400A - 1200A ONLY

AVAILABLE IN STOCK

The following standard ATS models are available from stock:

AMPERAGE	3 POLE	2 POLE OPTION TS 872	SERVICE ENTRANCE RATED ATS	SOLID NEUTRAL	MULTI- VOLTAGE (CUSTOMER CONFIGURABLE 208-600V)	TSC 7320 CONTROLLER	NEMA 1 ENCLOSURE	NEMA 3R ENCLOSURE OPTION	4 PROGRAMMABLE OUTPUT CONTACTS (2A, 24VDC)	MODBUS™ RTU REMOTE COMMUNICATION PORT (SERIAL RS 485)
100A	Standard	Available Option in Stock		Standard	Standard	Standard	Standard	Available Option in Stock	Standard	Standard
150A	Standard	Available Option in Stock		Standard	Standard	Standard	Standard	Available Option in Stock	Standard	Standard
200A	Standard	Available Option in Stock	Available Option in Stock	Standard	240V Max	Standard	Standard	Available Option in Stock	Standard	Standard
250A	Standard	Available Option in Stock	Available Option in Stock	Standard	Standard	Standard	Standard	Available Option in Stock	Standard	Standard
400A	Standard	Available Option in Stock	Available Option in Stock	Standard	Standard	Standard	Standard	Available Option in Stock	Standard	Standard
600A	Standard	Available Option in Stock	Available Option in Stock	Standard	Standard	Standard	Standard	Available Option in Stock	Standard	Standard
800A	Standard	Available Option in Stock	Available Option in Stock	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

AUXILIARIES:

AUX-BG	Generator Bypass Auxiliary Contact
AUX-BU	Utility Bypass Auxiliary Contact
KOTS-DSE	Key Operated Test Switch - Auto/Off/Engine Start/Test – includes the DSE2130 module
RO2157	Programmable Relay Output Expansion Module - Includes QTY 8, 2A Resistive 30VDC rated relays - 4 NO and 4 Form C Contacts.
TS-STG	24Vdc or 120VAC Shunt Trip Generator Switch (external power source required)
TS-STU	24Vdc or 120VAC Shunt Trip Utility Switch (external power source required)

COMMUNICATION:

EMB-TCP/IP (DSE855)	Ethernet Modbus™ Remote Communication (Modbus™ TCP)
RA7320 (DSE2548)	Remote Annunciator with eight configurable LEDs. Works up to 0.6 miles from the TSC7320. Up to 10 modules can be daisy-chain (Refer to the DSE2548 Datasheet)
RD7320 (DSE2520)	Remote Display. Up to three display modules can be connected to TSC7320 (Refer to the DSE2510-20 Datasheet)

ENCLOSURE:

LCK	Enclosure Lockable Door (Single point T-Handle lock)
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:

MTS	Manually Initiated Electrically Operated Transfer Switch c/w Source Selector Switch, Position Indicating Lights, Source Available Lights
TCP	Transfer Switch Connection Plate for Generator Supply
TS-SS	Internal Multi-Voltage Selector Switch (208V/240V/480V)
LSC	Load Shed, 5 Stage *Requires CTK Option

METERING:

LPM-DSE	Transfer Switch Load Power Metering CT Kit (Amp, Volt, Freq, kW, kVA, PF) **Requires CT Kit
CTKxxxx	Current Transformer Kit (xxxx -Specify CT Size 0100, 0150, 0250, 0400, 0600, 0800, 1200) **Requires GPM Option
MUP	Multifunction Utility Protective Relay – Basler™ BE1-11i (Protection Functions 27, 32, 47, 50/51, 67, 81O/U) Note: May be required by local utility for Momentary CT applications. Consult factory for other makes and models

POWER:

SPD	Surge Protection Device
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OTHER:

3YR	Additional 12 Month Parts & Labour Warranty
5YR	Additional 48 Month Parts & Labour Warranty