



Zenith ATS

ZBTS T-series Automatic Transfer Switches

30-3000 A



- Simplify your business operations
- Maximize uptime
- Plan for a safe and sustainable future

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Zenith ZBTS T-series

Continuous power. Non stop innovation.



Simplify business operations

Business is complicated, so why not choose equipment that makes things simpler? The ZBTS T-series is equipped with an intuitive full-color touchscreen HMI and is compatible with ABB-common Ekip™ Connect software to ease commissioning and operation, maximize flexibility with a wide 200-480V range and an array of standard programmable functions and IO, and finally, simplify service with unique modular components that are easier to stock and replace in the field. Whether you're an engineer, dealer, contractor, or end-user, Zenith ZBTS T-series will help make your business simpler.



Maximize uptime

Whether it's to save lives, protect key assets, or maximize efficiency, emergency and standby power systems are meant to keep the power on. But they are only as strong as the weakest link... which is why ZBTS T-series is built for high performance and incorporates design elements for simple service. Taking it to the next level, this advanced ATS range takes a proactive outage mitigation approach by monitoring temperature and contact health 24/7 and alerting to any anomalies, helping to ensure power keeps flowing. Don't let your ATS be the weak link in your power system.



Plan for a safe and sustainable future

A safer workplace not only protects personnel from injury but can also lower costs through increased productivity, quality, and employee well-being. The ZBTS T-series lineup has unique advances in safety with faster switching and no line voltages connected at the door. Similarly, creating a sustainable operation is not just something owed to future generations, but a cultural shift becoming a key proposition of a successful business. ZBTS leverages future proof upgradability features and ABB Ability™ Energy and Asset Manager to empower users to lower their carbon footprint. Plan for a safe and sustainable future, today.



—
Zenith ZBTS 30-1200 A



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Zenith ZBTS 1600-3000 A

Zenith ATS

Greater safety, convenience and reliability



Enables increased safety

- Complete barrier and shutter system prevents access to conductors while ATS is isolated or removed for maintenance
- Exterior-stored bypass operating handle eliminates need to open door until switch is isolated
- Inhibit mode helps protect against unexpected switching
- No line voltages at the door

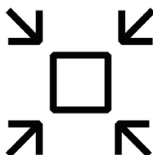


Proactive outage prevention

- Contact wear monitoring including real-time status and predicted contact end-of-life
- Minimum 3 embedded temperature sensors
- High current protection and alarm
- 24/7 monitoring and customizable text or email alerts available with ABB Ability™ Energy and Asset Manager

24/7
monitoring

Minimum
3
embedded
temperature sensors



Simplified service

- Quick swap HMI
- 95% fewer spare parts than legacy Zenith offering
- ABB HMI navigation and programming tool common to all ABB LV components
- Optional dual withdrawable bypass for 100-1200A range enables maintenance of both switches

95%
fewer spare parts

Dual
withdrawable
bypass available

**Easier to install, commission and operate**

- Color touchscreen HMI with intuitive menu navigation, measurements display, and 250 event log
- Wide 200-480V range with auto-configuration of system settings for 100-1200A range
- Ekip Connect software helps reduce commissioning time by 50%
- Five factory programmed packages available; IO can be re-programmed in seconds

200-480V
in a single design

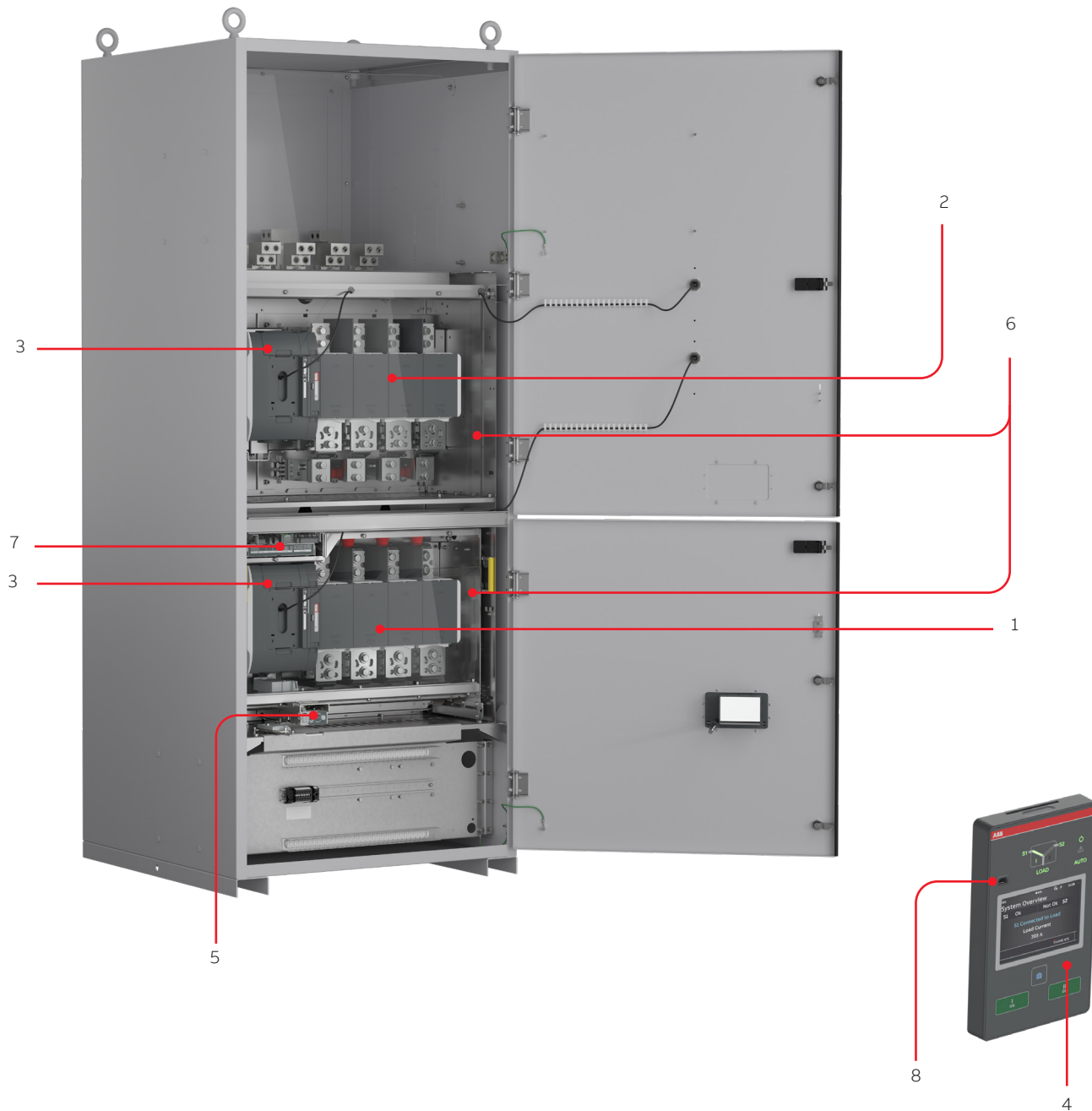
Up to
50%
faster commissioning
with Ekip™ Connect

**High performance**

- High time-based withstand and closing ratings (WCR) and even higher coordinated WCR, minimum of 100kA in each frame
- Short-time withstand ratings in every frame
- Fast controller response to outage recovery and fast switching (<50ms)
- Overlapping neutral on 30-1200A range
- Dual ATS standard for 100-1200A design - so no operator is required when in bypass mode
- Dual withdrawable ATS is optional - extending options for increasing power reliability.

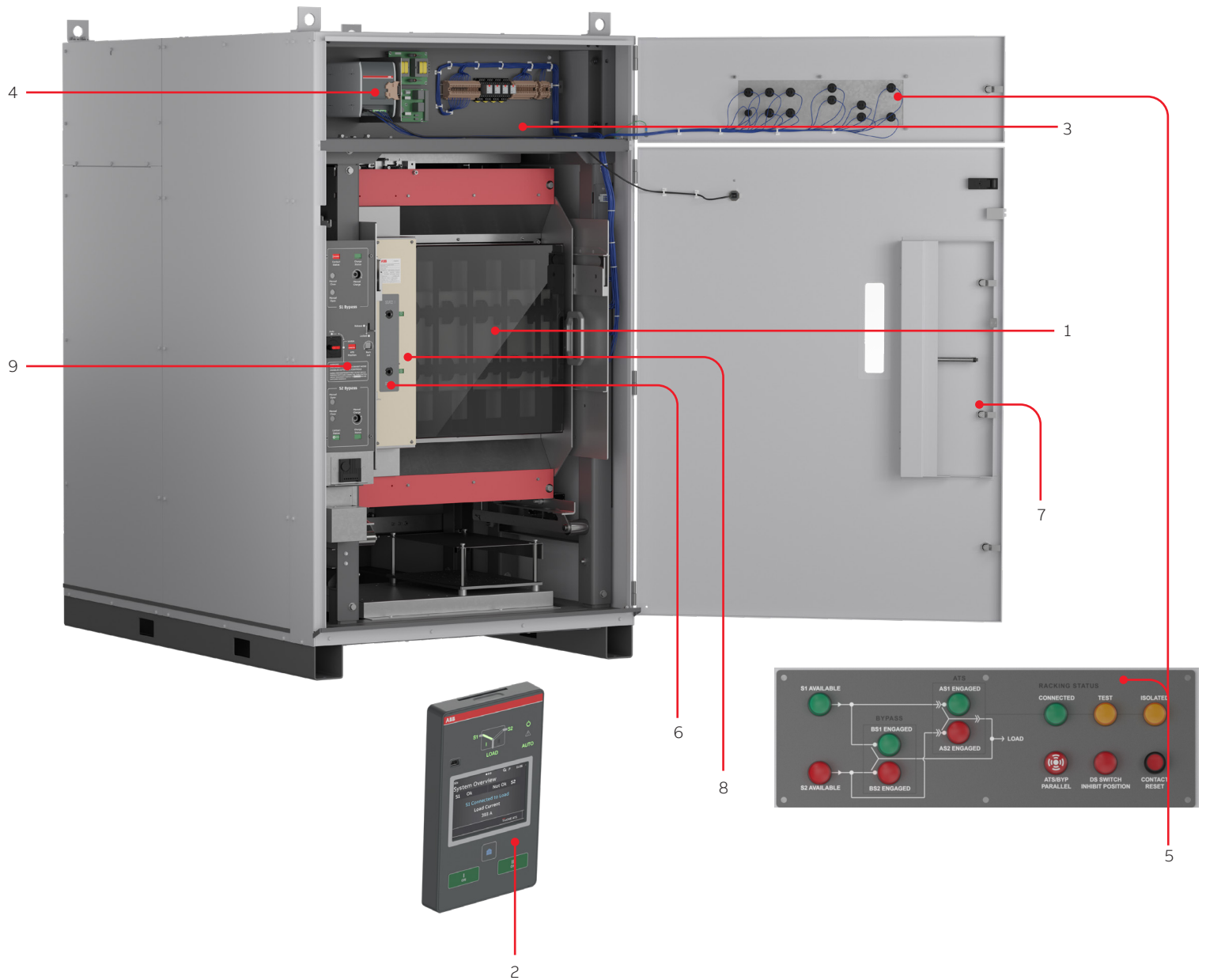
Fast switching
<50ms

Construction 30-1200A open and delayed transition



1. Automatic transfer switch
2. Bypass transfer switch (also automatic)
3. Embedded ATS control units and mechanisms
4. HMI unit, type ZBTS (Lvl 4) color touchscreen interface, one HMI for ATS and one for Bypass, providing bypass status indication
5. Bypass-isolation mechanism interface
6. Protective barriers (terminals behind top metal barrier)
7. Place for ATS connectivity modules (com and signaling), and auxiliary contact connections
8. Programming port, for Ekip Programming module and Ekip Connect software

Construction 1600-3000A



1. Automatic transfer switch power panel & mechanism
2. HMI unit, type ZBTS (Lvl 4) color touchscreen interface
3. ATS / Bypass-isolation controls cabinet - location of customer control connections and connectivity modules (com and signaling)
4. TruCONTROL ATS controller
5. Bypass-isolation indication panel
6. Handle connection points for manual operation
7. Handle for ATS manual operation
8. ATS position indicator
9. Bypass-isolation mechanism interface

Main features

For more information, consult ABB



ZBTS Controls		
Ampere sizes available	Open transition	UL: 100-3000 A
	Delayed transition	UL: 100-3000A
	Closed transition	UL:1000-3000A
Rated voltage	200-480Vac	
Rated frequency	50 / 60 Hz	
Phase system	Single and Three	
Number of poles	2, 3 and 4	
Neutral configuration		
Switched neutral	Yes	
Overlapping neutral	30-1200A only	
Solid neutral	Yes	
Product type		
Open transition (I-II)	Yes	
Delayed transition (I-O-II)	Yes	
Closed transition (I-O-II)	Yes	
Voltage and frequency settings		
Pick up Voltage Source 1 ¹	71-99%, 101-119%	
Drop out Voltage Source 1 ²	70-98%, 102-120%	
Pick up Voltage Source 2 ¹	71-99%, 101-119%	
Drop out Voltage Source 2 ²	70-98%, 102-120%	
Pick up Frequency Source 1	80.5-99.5%, 100.5-119.5%	
Drop out Frequency Source 1	80-99%, 101-120%	
Pick up Frequency Source 2	80.5-99.5%, 100.5-119.5%	
Drop out Frequency Source 2	80-99%, 101-120%	
Time delay settings		
Override momentary Source 1 Outage, sec	0-60	
Transfer from Source 1 to Source 2, sec	0-3600	
Override momentary Source 2 Outage, sec	0-60	
Transfer from Source 2 to Source 1, min	0-120	
Generator stop delay, min	0-60	
Center-OFF delay, sec	0-300	
Pre-transfer delay S1 to S2, sec	0-300	
Post-transfer delay S1 to S2 , sec	0-300	
Pre-transfer delay S2 to S1, sec	0-300	
Post-transfer delay S2 to S1, sec	0-300	
Elevator Pre-signal delay S1 to S2, sec	0-60	
Elevator Post-signal delay S1 to S2, sec	0-60	
Elevator Pre-signal delay S2 to S1, sec	0-60	
Elevator Post-signal delay S2 to S1, sec	0-60	
Load shed delay, sec	0-300	
Source failure detections		
No voltage	Yes	
Undervoltage	Yes	
Overvoltage	Yes	
Phase missing	Yes	
Voltage unbalance	Yes	
Invalid frequency	Yes	
Incorrect phase sequence	Yes	

¹ Minimum pick up rating for 1600-3000A designs is 85%

² Drop out voltage settings possible as low as 240V-480V systems; 1600-3000A range minimum drop out voltage is 75%

Main features

For more information, consult ABB



ZBTS controls	
Controls	Color touchscreen
LED indications for ATS, S1 and S2 status	Yes
Bypass status indication	Yes
Programmable digital inputs/outputs	Yes
Auto config (voltage, frequency, phase system)	Yes
Source priority	Source 1/2, No priority
Manual re-transfer	Yes
In-phase monitor (synchro check)	Yes
Genset exercising: on-load, off-load	Yes
In-built power meter module	Yes
Load shedding	Yes
Real time clock	Yes
Event log	Yes
Predictive maintenance	Yes
Voltage and current harmonics measuring	Yes
Field-mount accessories	
Auxiliary contacts for position indication	Yes
Digital input/output modules (factory programmed)	Yes
12-24 Vdc aux supply module for controller	Yes
Communication modules	Yes
Connectivity capability	
Modbus RTU (RS-485)	Yes
Modbus/TCP	Yes
Profibus DP	Yes
ProfiNet	Yes
DeviceNet	Yes
Ethernet IP	Yes
Monitoring via ABB Ability™ Energy and Asset Manager	Yes
For applications	
Mains - Mains	Yes
Mains - Generator (minimum size 20kVA)	Yes
UL short circuit withstand ratings	
Coordinated breaker WCR	Yes
Time-based WCR	Yes
Short-time ratings	Yes

Main features

For more information, consult ABB



The inputs and outputs in the following tables are available and programmable on all ZBTS T-series transfer switches. When ordering a switch, an IO package must be selected. This package determines the number of IO and the functions that will be factory programmed. Although factory programmed, all included IO may be re-programmed by the user, password permitting, via the HMI, Ekip Connect, or via communications. See table titled "IO packages" in ordering information section for more details.

Type	Functions	Pre-configured IO packages		Controls	Flex ¹	Motor ¹
		Base	Plus ¹			
Input functions						
No function	Input disabled.	2	-	-	-	-
Emergency Stop	Transfers to O position in delayed transition I-O-II type switches. Disables automatic control mode in both delayed and open transition types.	-	-	-	-	-
Remote Test On Load / Peak shave	Start/stop test on load sequence in rising (NO) or falling (NC) edge of the input signal.	-	1	1	1	1
Remote Test Off Load	Start/stop test off load sequence in rising (NO) or falling (NC) edge of the input signal.	-	-	-	-	-
Inhibit AUTO Mode	Prevent switch control operations, configuration, test sequences and generator start in case of priority source failure.	-	-	1	-	1
Manual Retransfer	Disables automatic transfer back to priority source.	-	-	1	1	1
Source Priority S1	Sets priority for source 1 in transformer-transformer application.	-	-	-	-	-
Source Priority S2	Sets priority for source 2 in transformer-transformer application.	-	-	-	-	-
Inhibit Transfer	Disables automatic transfer from priority source to non-priority source.	-	-	1	-	1
Bypass Running Time Delays	Bypass any currently running time delay.	-	-	1	-	-
Load Shed ATS to S1	Allows back-up generator to signal to ATS to move to S1 to prevent overload. Stays in S1 if S1 restores and input removed.	-	-	1 ²	1 ²	1 ²
Load Shed ATS to OFF	Allows back-up generator to signal to ATS to move to O to prevent overload. If S1 restores, transfer to S1 will occur even it input is maintained.	-	-	1 ³	1 ³	1 ³
Remote Control to S1	Transfer to S1 when active. Overridden by activated 'Remote Control to OFF' signal.	-	-	-	-	-
Remote Control to OFF	Transfer to O position when active.	-	-	-	-	-
Remote Control to S2	Transfer to S2 when active. Overridden by activated 'Remote Control to OFF' or 'Remote Control to S1' signals.	-	-	-	-	-
Reset Alarm	Reset any active switch control alarms (open I failure, close I failure, open II failure, close II failure).	-	-	-	-	-
Manual-Auto Mode	Toggle automatic/HMI control mode, input is active only in rising/falling edge according to contact type.	-	-	-	-	-

¹ Three additional inputs available if selector switch option not selected

² Open transition configurations only

³ Delayed transition configurations only

Main features

For more information, consult ABB



Type	Functions	Pre-configured IO packages				
		Base	Plus ⁴	Controls ⁴	Flex ⁴	Motor ⁴
Output functions						
No Function	Output disabled.	3	-	-	-	-
Alarm / Product availability	Signals any active alarms or ATS being disabled for automatic transfer operations.	-	-	-	-	-
Load Connected to S1	Signals switch in position I.	-	-	-	-	-
Load Disconnected	Signals switch in position O.	-	-	-	-	1
Load Connected to S2	Switch in position II.	-	-	-	-	-
Pre-transfer Signal	Signal is activated and transfer is delayed according to pre-transfer delay. Signal is kept activated according to post-transfer delay after transfer.	-	-	1	1	2
Source 1 Available	Signals no anomalies in S1 voltage supply.	-	1	1	1	1
Source 2 Available	Signals no anomalies in S2 voltage supply.	-	1	1	1	1
Load Shed 1	Used for shedding non-essential loads before transferring to non-priority source. The signal is activated before transferring to non-priority source according to load shed delay and kept activated until load is transferred back to priority source.	-	-	-	-	-
Elevator pre-signal	The signal is activated and transfer is delayed according to Elevator pre-signal delay. The signal is kept activated according to Elevator post-signal delay after transfer.	-	-	1	1	2

⁴ One additional output available if transfer alarm option not selected

Zenith ZBTS T-series 30-3000A ordering information

Part number codes

Understanding the type code keys below will help you quickly identify the correct product for your needs. The simple naming system allows you to see the product type, ampere rating, standard classification and number of poles, all in one table.

Explanation of the types ZBTS T-series

Z	S	B	O	1	2	0	W	S	1	S	5	T	P	T	X	X	0
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

1	Zenith
Z	ABB Zenith Labeled
2	Product Family
S	ZBTS T-series
3	Application
A	ATS
B	Standard Bypass-Isolation ATS
D	Dual Withdrawable Bypass ATS ¹
4	Transition Type
O	Open Transition
D	Delayed Transition
C	Closed Transition
567	Amperage
010	100 A
020	200 A
026	260 A
040	400 A
060	600 A
080	800 A
100	1000 A
120	1200 A
160	1600 A
200	2000 A
260	2600 A
300	3000 A
8	System voltage
B	208 V 1 Ph
C	220-240V 1 Ph
E	380-415V 1 Ph
F	440-480V 1 Ph
R	208-220V 3 Ph
S	230-240V 3 Ph
T	380-400V 3 Ph
U	415 V 3 Ph
V	440 V 3 Ph
W	460-480V 3 Ph

9	Neutral
S	Switched Neutral
O	Overlapping MFBL Neutral ²
X	No Neutral
B	Solid Neutral Bar
10	Enclosure
X	No Enclosure (configured open style) ²
1	NEMA 1
2	NEMA 12
3	NEMA 3R
4	NEMA 4
5	NEMA 4X
6	NEMA 1 + heater
7	NEMA 12 + heater
8	NEMA 3R + heater
9	NEMA 4 + heater
0	NEMA 4X + heater
A	NEMA 1 + Adapter bay
B	NEMA 12 + Adapter bay
C	Nema 3R + Adapter bay
D	NEMA 4 + Adapter bay
E	NEMA 4X + Adapter bay
F	NEMA 1 + Adapter bay & heater
G	NEMA 12 + Adapter bay & heater
H	NEMA 3R + Adapter bay & heater
I	NEMA 4 + Adapter bay & heater
J	NEMA 4X + Adapter bay & heater
11	Lugs
S	Mechanical lugs (30-1200A)
M	Mechanical lugs 600 MCM (1600-4000A)
L	Mechanical lugs 750 MCM (1600-4000A)
X	No lugs (1600-4000A)
C	2-Bolt Compression (30-260A reference table for size/qty)
D	2-Bolt Compression (400-4000A reference table for qty)
E	2-Bolt Compression 750 MCM (1600-4000A reference table for qty)
12	Ground Bar
1	(3) #8-1/0 cables
2	(6) #8-1/0 cables
3	(6) #6-250MCM

¹ Only available from 100-1200A
² Available from 100-1200A
³ Available initially only for 1600-3000A

Zenith ZBTS T-series 30-3000A ordering information

Part number codes

Understanding the type code keys below will help you quickly identify the correct product for your needs. The simple naming system allows you to see the product type, ampere rating, standard classification and number of poles, all in one table.

Explanation of the types ZBTS T-series

Z	S	B	O	1	2	0	W	S	1	S	5	T	P	T	X	X	0
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

4	(12) #6-250MCM
5	(8) #2-600MCM
6	(12) #2-600MCM
7	(24) #2-600 MCM
8	(36) #2-600 MCM
X	No ground bar, lug on cabinet
13	Metering options
T	Embedded power meter
1	M91 Meter
14	IO and indication packages
B	Base
P	Plus
C	Controls
F	Flex
M	Motor
15	Communications
X	None
R	Modbus RTU
T	Modbus TCP
E	Ethernet/IP
D	DeviceNet
B	Profibus
N	Profinet
A	ABB Ability Ekip Com Hub
1	Modbus RTU + Modbus TCP
2	Modbus TCP + Ethernet/IP
3	Modbus RTU + Ekip Com Hub
4	Modbus TCP + Ekip Com Hub
5	Ethernet/IP + Ekip Com Hub
6	DeviceNet + Ekip Com Hub
7	Profibus + Ekip Com Hub
8	Profinet + Ekip Com Hub
16	Other Options (Switches, Surge protection)
X	None
S	Switch - Test/Auto/inhibit/Start (keyed)
A	Audible Transfer Alarm
T	SPD Type 1, Load Side
1	S & A
2	S & T
3	A & T
4	S, A & T

17	Extra
X	R5B
4	R4B
3	R3B
18	Extra
X	None

Technical data

ZBTS T-series 30-3000A

Zenith ZBTS T-series technical data 100-200 A

		Zenith switch size (A)			
Data according to UL1008		100	125	160	200
Rated operational voltage	Vac	200-480			
Operating voltage range	Vac	160-576			
Rated frequency	Hz	50-60			
Emergency systems - Motor loads or total system	A	100	125	160	200
Optional standby systems - Motor loads or total system	A	100	125	160	200
Short-circuit withstand/closing and short-time current ratings	kA	See table on following page			
Contact transfer time I-II, II-I	Load interrupting time	ms			
Operating transfer time I-II, II-I	ms	<50			
ATS current draw during transfer / time duration	A / ms	<500			
Suitable for applications		35/<110			
ATS-Bypass orientation		Transformer - Transformer, Transformer - Generator			
		Bottom and Top			

Zenith ZBTS T-series technical data 260-1200 A

		Zenith switch size (A)					
Data according to UL1008		260	400	600	800	1000	1200
Rated operational voltage	Vac	200 - 480					
Operating voltage range	Vac	160 - 576					
Rated frequency	Hz	50-60					
Emergency systems - Motor loads or total system	A	260	400	600	800	1000	1200
Optional standby systems - Motor loads or total system	A	260	400	600	800	1000	1200
Short-circuit withstand/closing and short-time current ratings	kA	See table on following page					
Contact transfer time I-II, II-I	Load interrupting time	ms					
Operating transfer time I-II, II-I	ms	<50					
ATS current draw during transfer / time duration	A / ms	<500					
Suitable for applications		35 / <110					
ATS-Bypass orientation		40 / <130					
		Transformer - Transformer, Transformer - Generator					
		Bottom and Top					

Zenith ZBTS T-series technical data 1600-3000 A

		Zenith switch size (A)			
Data according to UL1008		1600	2000	2600	3000
Rated operational voltage	Vac	200-480			
Operating voltage range	Vac	177 - 576			
Rated frequency	Hz	50-60			
Emergency systems - Motor loads or total system	A	1600	2000	2600	3000
Optional standby systems - Motor loads or total system	A	1600	2000	2600	3000
Short-circuit withstand/closing and short-time current ratings	kA	See table on following page			
Contact transfer time I-II, II-I	Load interrupting time	ms			
Operating transfer time I-II, II-I	ms	<50			
ATS current draw during transfer / time duration	A / ms	<500			
Suitable for applications		50-65			
ATS-Bypass orientation		<70			
		Transformer - Transformer, Transformer - Generator			
		Bottom and Top			

Technical data

ZBTS T-series 100-3000A

ZBTS T-series Withstand and Close-on Ratings (WCR) and Short-time Ratings (STR)

ATS frame	ATS rating	Transition types	Coordinated fuse ratings			Coordinated breaker ratings				Time-based ratings		Short-time ratings	
			480V Max withstand	Class	Max fuse size	240V Max withstand	Max breaker size	480V Max withstand	Max breaker size	480V Max withstand	Time-period	480V Max withstand	Time-period
R4B	100-1200A	OT, DT	100kA ¹	Class L	2000A	200kA ¹	1600A	100kA ¹	1200A	50kA	0.1 sec	50kA ¹	0.5 sec
			200kA ¹	Class J or T	800A			65kA ¹	1600A	65kA	0.05 sec		
			200kA ¹	Class L	1200A								
R5B	1600-3000A	OT, DT, CT	200kA	Class L	4000A	100kA	no max	100kA	no max	100kA	0.05 sec	65kA	0.5 sec

¹3 phase applications only

²For detailed WCR ratings by ATS and breaker type, please refer to document number 1SCC303015C0201, Zenith short circuit ratings

ZBTS T-series Testing and Standards Compliance

Description	Standard
UL, cUL listing	UL 1008
Conducted and radiated emissions	CISPR 11:2009, Class A
ESD immunity test	IEC/EN 61000-4-2 Class B
Radiated RF, electromagnetic field immunity test	IEC/EN 61000-4-3 10 V/m
Electrical fast, transient/burst immunity test	IEC/EN 61000-4-4
Surge immunity test	IEC/EN 61000-4-5 0.5 to 2 kV
Conducted immunity test	IEC/EN 61000-4-6
Voltage dips and interruption immunity	IEC/EN 61000-4-11
Harmonic voltage immunity test	IEC/EN 6100-4-13

ZBTS T-series AL/CU UL Listed Solderless Screw-Type Terminals for External Power Connections

Model	Amperage	Cables per phase & neutral	Range of wire sizes	
ZBTS ZBTSD ZBTSCT	100-200	1	6 AWG - 300 kcmil	(14 - 152 mm ²)
	260-400	1 / 2	1x 4 AWG - 600 kcmil / 2x 1/0 - 250 kcmil	(1x 25 - 304 mm ² / 2x 55 - 127 mm ²)
	600	2	2 AWG - 600 kcmil	(34 - 304 mm ²)
	800-1200	4	2 AWG - 600 kcmil	(34 - 304 mm ²)
	1600-3000	8	2 AWG - 600 kcmil	(34 - 304 mm ²)
		8	750 kcmil	(380 mm ²)

Dimensions

ZBTS T-series 30-3000A

Figure 1 100-1200A

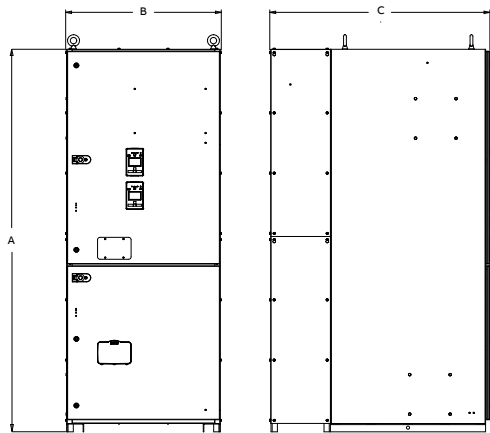
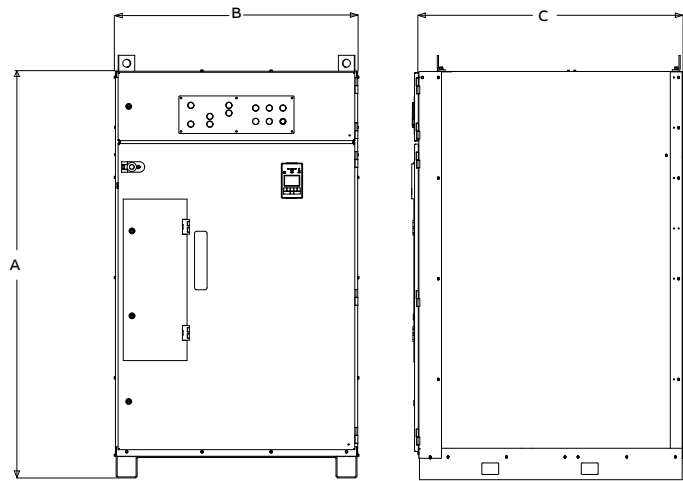


Figure 2 1600-3000A



ZBTS T-series dimensions

Model	ATS Rating (A)	Poles	Dimensions, ² in (mm)			Reference figure
			Height (A)	Width (B)	Depth (C)	
ZBTS	100-1200	2, 3, 4	92 (2336.8)	36.1 (917.0)	37.4 (950.0)	1
ZBTSD	1600-3000	3, 4	77.0 (1955.8)	46.0 (1168.4)	67.0 (1701.8)	2



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