LIFE SAFETY ATS SPECIFICATION Series LS-CC

Description

The Mertech Automatic Transfer Switches with Single or Double By-Pass are the ideal solution for transferring power from the Mains to a Standby supply or from Network to Network supplies. With Mains or Network monitoring and full electrical and mechanical interlocking you can be confident of switching supply under fault conditions at any time. Sizes from 45 Amps up to 400 Amps, and larger sizes available upon request, we can cover the requirements of all your likely projects. With full conformity to the latest IEC 60947-6-1 you can confidently specify the Mertech range of Automatic Transfer Switches.

Designed for

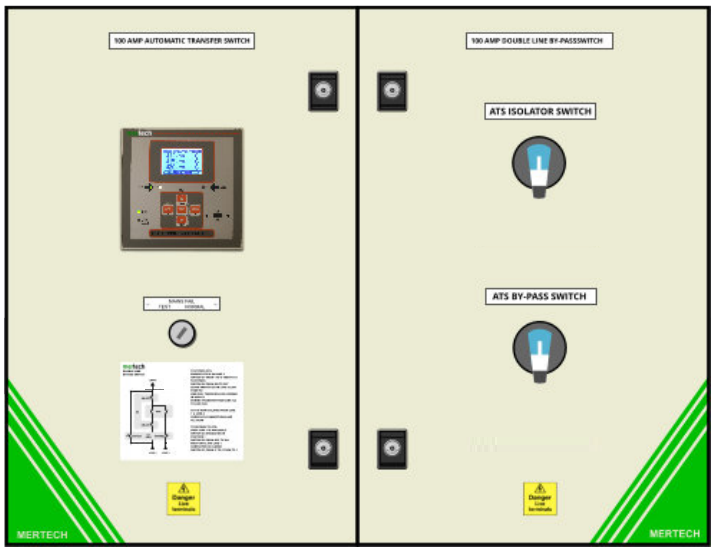
- Healthcare buildings
- Generator manufacturers
- Fire pump installations
- Life safety schemes
- Data centres

Features

- Multiple programable parameters including mains delay timers, changover timers, configurable alarm outputs
- Mains and/or Standby By-Pass with full ATS Isolation
- Locked Rotor Current selection
- Switching between Line to line, line to generator or generator to generator

Specifications

- IEC 60947-6-1 - ATS
- IEC 60947-3 - BY-PASS
- IEC 60947-1
- TB 210: EN 12845 2015:1
- BS 8519: 2010
- EN 61010-1
- EN 61000-6-2 & 4



ATS with Single By-Pass (Models vary)

Details

Supply Voltage	400V AC, 3P 4W, 50Hz
No. Phases	3 Phase 4 Wire
System Earth	Solidly Earthed
Location	Switchroom
Atmosphere	Indoor, fine particles of dust.
Ambient Temp	Max +30deg C Min + 5deg C
Enclosure Protection	IP 65 to IEC60529
ATS Standard	IEC 60947-6-1

Definition	Life Safety
Type	ATS
Series	LS-CC
Optical Comms Point	✔
IP65 Protection	✔
Maintenance Counters	✔
3 Phase Mains Sensing	✔
3 Phase Standby Sensing	✔
Single Phase Mains Sensing	
Single Phase Standby Sensing	
LCD Display	✔
Status Lamps	
Event Storage	✔
Manual By-Pass	✔
IEC 60947-6-1	✔
TB 210: BS EN 12845	✔
BS 8519:2010*	✔

*For BS8519:2020 please use PC version

ATS Operation modes & features:

Start / Stop Generator Signal

A volt free changeover contact for clients use to signal the Generator to start & stop as required by the control program. Wired to terminals S5, S6, S7.
A changeover contact is provided with 1 n/o & 1 n/c contact to be used as required by the generator control panel.

Delay On Start Timer (DOST)

A 'Delay on Supply off' timer is provided and associated with the Generator Start / Stop signal This is adjustable from 0 -60 Seconds and provides a timed delay on the start signal, on Terminals S5, S6, S7.

Delay On Changeover Timer

This timer allows a delay to be set in changing over between the Line 1 (K1) and the Line 2 (K2) supplies / contactors.

Generator Cool Down Timer

Upon a return to the primary Line 1 supply this timer allows the Line 2 supply, if using a Generator to run on for a time period prior to removing the start signal.

BMS / Indication Contact - Load On Line 1

A volt free indication contact of the K1 Line 1 contactor, This is a N/O contact so when the contactor is open and the Line 1 supply is not on load it is open and when the contactor is closed and on load the contact is closed. Wired to terminals S8, S9.

BMS / Indication Contact - Load On Line 2

A volt free indication contact of the K2 Line 2 contactor, This is a N/O contact so when the contactor is open and the Line 2 supply is not on load it is open and when the contactor is closed and on load the contact is closed. Wired to terminals S10, S11.

Test Switch

A Key switch is provided to simulate a mains failure, In the Normal position the system is set for Automatic mains failure detection & normal changeover, In the Test position the loss of Supply 1 is simulated and the system will changeover to the standby Line 2 supply. The key is removable in both positions.

BMS / Indication Contact - Test Switch

A volt free indication contact of the mains fail test switch is given, this is a N/C Contact so when the switch is turned to Test the contact will open and when the switch is turned to Normal the contact will close. This is wired to Terminals S12, S13.

Monitoring via smartphone or tablet

Monitoring is available on smartphone or tablet with the use of the optional WiFi dongle and free app

ATS Operation modes

OFF mode (OFF)
In this mode the device is disabled, and does not take any action. All views, both of the measures of the status LEDs remain active. If the control of the switching devices is impulsive, in OFF mode both open and close commands are disabled. Pressing the OFF- RESET button resets the retentive alarms, provided that the conditions that generated the alarm has been removed.

MANUAL mode (MAN)
In MAN mode, you can manually control the switches on the display by selecting the switch that you want to control by pressing the MAN key, and pressing the ▲ or ▼ button to confirm the operation of closing or opening. While the opening-closing of the contactors is enabled, the page scroll is locked. Pressing MAN several times it is possible to unlock it and to move through other display pages.

AUTOMATIC mode (AUT)
The AUTO mode is highlighted by the lighting of the corresponding green LED. In automatic mode, the unit manages automatically the opening and closing of the contactors and the starting and stopping of generator sets, if required.
When the main line voltage is out of bounds for a time longer than those set (line presence green LED turns off), the unit disconnects the load from the priority line and connect it to the secondary or standby line, managing both start-up of any generator and interlock time delay.
When the main line comes back within the limits, the unit will switch the load to it and decide the possible cooling cycle of the generator. Auto or manual mains return is programmable

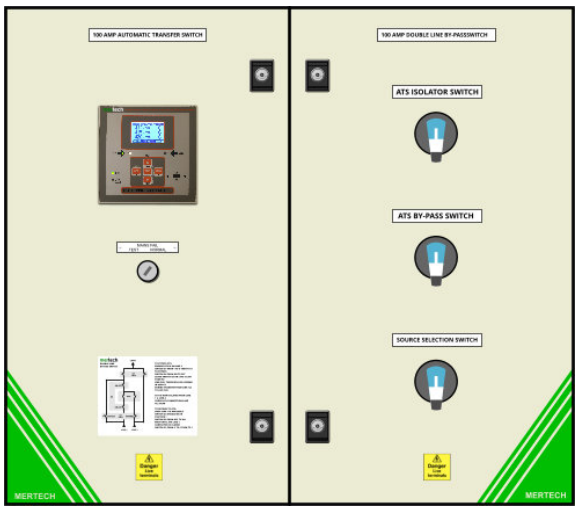
Bypass Operation modes & features:

Operation modes
The Mertech Bypass switches are manual four pole transfer switches with positive break indication. They are designed to isolate ATS type electrical equipment (automatic transfer switch), with minimum interruption to the load supply.

Options
Single Line or Double Line bypass are available, Integrating a manual transfer switch into the installation enables source selection when double line bypass is required.

Advantages
Mertech bypass switches have 3 stable positions which are not affected by voltage drops or vibrations. Simultaneous upstream and downstream isolation and fully visualised breaking.

Integration
The Bypass Switch can be ordered separately or fitted to the ATS.
When ordered together the ATS and Bypass panels will be fixed together and the wiring and switching fully integrated to provide Single / Double Line Bypass as requested.



ATS with Double By-Pass

MERTECH SWITCHBOARDS LTD

Rev 2 - 14.03.2023

LIFE SAFETY AUTOMATIC TRANSFER SWITCHES WITH BY-PASS - SERIES - LS-CC

Frame Size	Size	45	63	100	125	160	250	350	400
Standard	IEC/EN		IEC 60947-6-1 & BS 8519 for ATS - IEC 60947-3 for By-Pass						
Rated Operational Current Ith AC31	A	45	63	100	125	160	250	350	450
Rated Operational Current Ie AC33	A	26	40	80	80	110	150	265	320
Max. Power IEC at 400V (AC33)	kW	13	18.5	45	55	55	80	140	170
No. of Poles	P	4P	4P	4P	4P	4P	4P	4P	4P
Dimensions Height SBP/DBP	mm	600/800	600/800	600/800	600/800	800/1200	800/1200	1000/1600	1000/1600
Width	mm	800	800	800	800	1200	1200	1600	1600
Depth	mm	210	210	210	210	300	300	300	300

Technical Details

Rated Insulation Voltage Ui	V	800	800	800	800	800	800	800	800
Rated Operational Voltage Ue	V	400	400	400	400	400	400	400	400
Rated frequency	Hz	50	50	50	50	50	50	50	50
Class		CC	CC	CC	CC	CC	CC	CC	CC
Utilization Category		AC 31A	AC 31A	AC 31A	AC 31A	AC 31A	AC 31A	AC 31A	AC 31A
Rated Impulse withstand Voltage Uimp	kV	8	8	8	8	8	8	8	8
Rated making capacity at <440V	A	260	800	1200	1200	1100	1500	2750	3150
Rated breaking capacity at 415V	A	208	800	1200	1200	1300	1500	2500	3000
Rated short time allowable current (IEC/EN60947-1)	A / 1s	563	1083	1733	2383	2383	3250	5742	6933
	A / 5s	289	556	889	1222	1222	1667	2944	3556
	A / 10s	210	400	640	880	1100	1300	2200	2900
	A / 20s	147	283	453	623	623	850	1502	1813
	A / 30s	127	244	391	538	538	733	1296	1564
	A / 60S	95	183	293	403	403	550	972	1173
Max. fuse size - gG	A	50	100	160	160	200	250	400	500
Mech. Life (No. of ops. - millions)	mil	20	15	15	15	10	10	10	10
Elect. Life (Ie at 400V in AC3) (million)	mil	2	1.5	1.3	1.3	1.1	1.1	1	0.7
Mechanical operations (ops. per Hr)	cy/hr	3600	3600	3600	3600	2400	2400	2400	2400
Terminal Position I-II-Load		Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom	Bottom
Terminal Capacity Min Cu (cable)	mm^2	2.5	2.5	6	10	16	35	-	-
Max Cu (cable)	mm^2	35	35	50	50	95	150	-	-
Busbar (width)	mm	-	-	-	-	-	-	24	25
Est. Weight 4P kg	kgs	20	20	20	25	35	45	75	85
Mounting		Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Coil Operating Voltage	V	220/240	220/240	220/240	220/240	220/240	220/240	220/240	220/240
Coil Voltage limits - pick-up	Us %	80-110	80-110	80-110	80-110	80-110	80-110	80-110	80-110
Coil Voltage limits - drop-out	Us %	20-55	20-55	20-55	20-55	20-60	20-60	20-60	20-60
Operating sequence (default times)									
Mains failure time (adj)	secs	5	5	5	5	5	5	5	5
Delay on change over time (adj)	secs	6	6	6	6	6	6	6	6
Mains return time (adj)	secs	5	5	5	5	5	5	5	5
Cooldown time (adj)	secs	120	120	120	120	120	120	120	120
Min. Voltage limit for trip	Us %	85	85	85	85	85	85	85	85
Min Voltage pick-up	Us %	90	90	90	90	90	90	90	90
Max Voltage limit for trip	Us %	115	115	115	115	115	115	115	115
Max Voltage limit for pick-up	Us %	110	110	110	110	110	110	110	110
Phase failure threshold	Us %	70	70	70	70	70	70	70	70
Max frequency limit	Us %	105	105	105	105	105	105	105	105
Min frequency limit	Us %	95	95	95	95	95	95	95	95