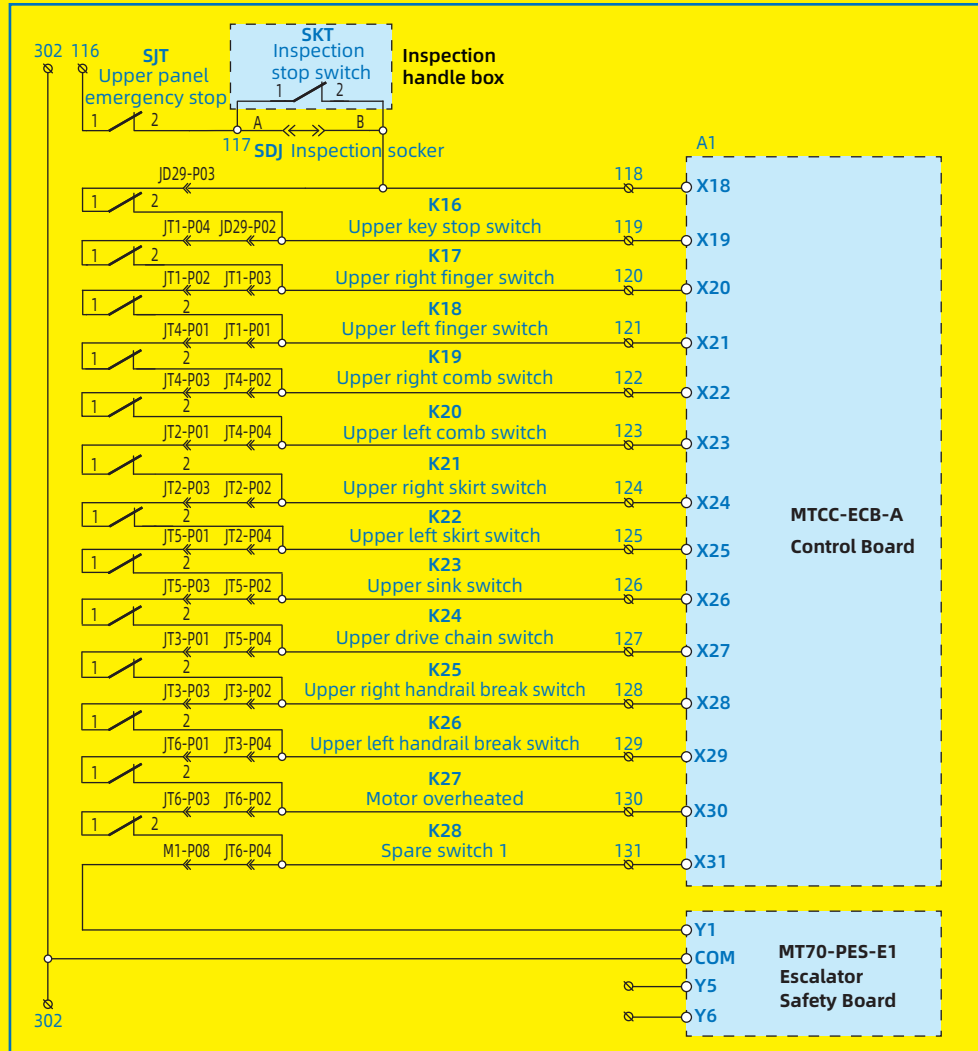
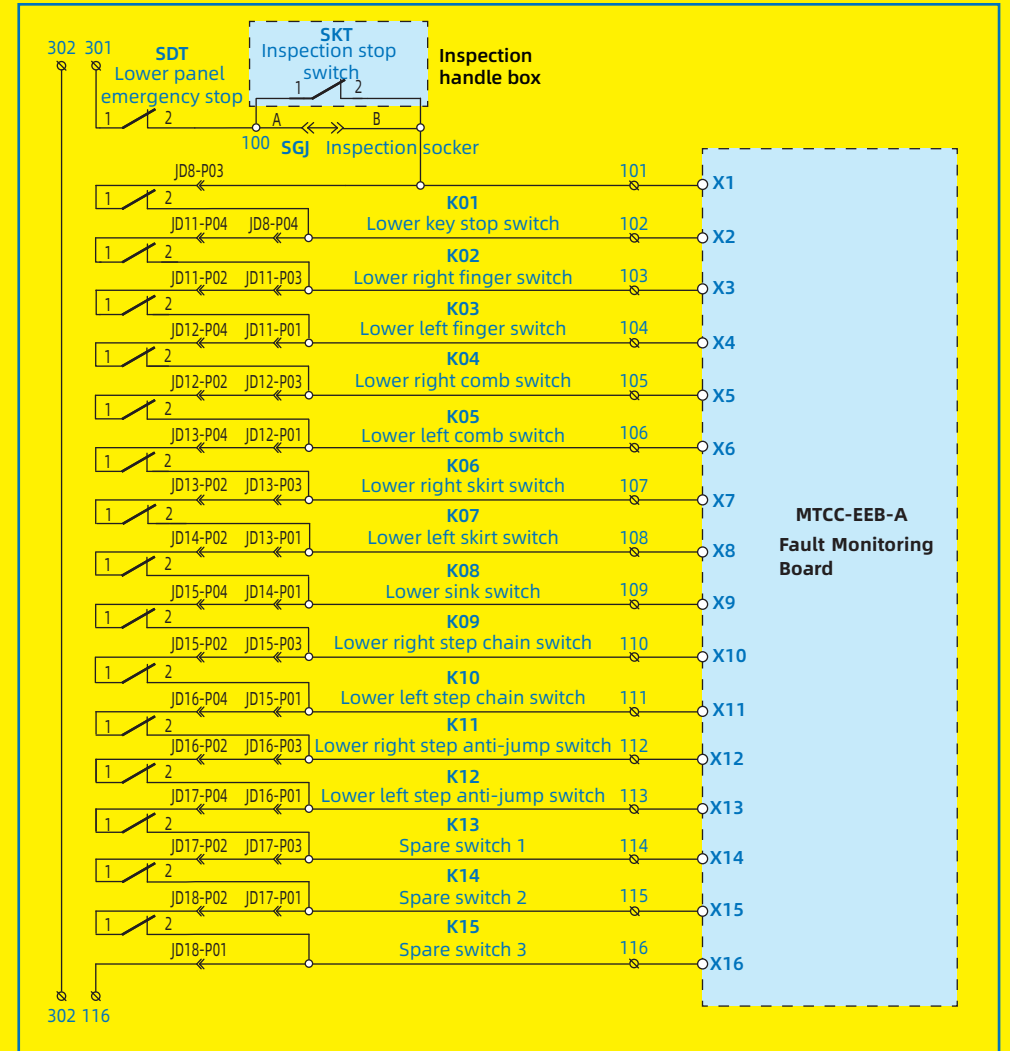


Safety Circuit Description

Upper Panel Safety Circuit



Lower Panel Safety Circuit



Troubleshooting (MTCC-ECB-A Control Board)

Control Board Fault

Fault	Fault Subcode	Counter-measures
E01 Acc. overcurrent	01: Acc. overcurrent	<ul style="list-style-type: none"> • Correct control panel and motor wiring • Set correct motor parameters • Select proper control panel power • Set appropriate Acc. and Dec. time • Select speed tracking start mode
E02 Dec. overcurrent	02: Dec. overcurrent	
E03 Constant overcurrent	03: Constant overcurrent	
E04 Acc. overvoltage	01: Acc. overvoltage	<ul style="list-style-type: none"> • Check input supply voltage • Set proper Dec. time • Check and standardize system wiring • Select speed tracking start mode • Select brake components as recommended in the manual
E05 Dec. overvoltage	02: Dec. overvoltage	<ul style="list-style-type: none"> • Check the input power supply or energy consumption braking components • Set reasonable overvoltage stall point
E06 Constant overvoltage	03: Constant overvoltage	
E07 Stall overvoltage	01: Stall overvoltage	
E09 Radiator overheating	02: Radiator overheating	<ul style="list-style-type: none"> • Derating use, power amplification • Rectify the external ventilation of the control panel and replace the fan • Seek technical support
E10 Brake unit fault	00: Brake unit fault	<ul style="list-style-type: none"> • Seek technical support
E12 Parameter identification fault	/	<ul style="list-style-type: none"> • Check the motor wiring • Enter the correct nameplate parameters • Seek technical support
E14 Current detection circuit fault	/	<ul style="list-style-type: none"> • Contact factory for maintenance
E15 Input phase loss	/	<ul style="list-style-type: none"> • Check the three phase input power • Seek technical support
E16 Output phase loss	/	<ul style="list-style-type: none"> • Check the wiring of the control panel and the motor • Check the motor
E17 Controller overload	/	<ul style="list-style-type: none"> • Seek technical support
E19 Motor overload	/	
E21/E22 Control board/keypad EEPROM read and write abnormal	/	<ul style="list-style-type: none"> • Contact factory for maintenance • Replacing the keypad
E23 Parameter setting error	/	<ul style="list-style-type: none"> • Select the motor matching the power of the control panel • Set motor parameters correctly
E25 Quiescent current fault	/	<ul style="list-style-type: none"> • Check and confirm that no feedback load flows into the inverter output • Set F09.05 = 0.0 to shield fault
E28 SCI communication timeout	/	<ul style="list-style-type: none"> • Check the wiring
E30 Safety circuit fault	/	<ul style="list-style-type: none"> • Check the safety switch to confirm that it does not operate • Check safety switch wiring
E31 Drive chain fault	/	<ul style="list-style-type: none"> • Check the drive signal and mechanical

Fault	Fault Subcode	Counter-measures
E32 Contact sticking fault	00/01: Contact sticking during run/start	<ul style="list-style-type: none"> • Check contactor contacts and wiring
E33 Brake contactor feedback fault	00: Contactor does not suck	<ul style="list-style-type: none"> • Check the brake output and wiring • Set F03.19 (contactor test)
	01: Contactor welding	
E38 Motor speed fault	/	<ul style="list-style-type: none"> • Check motor speed measuring equipment and wiring • Check F03.01, F04.01, F04.03 • Check the escalator machinery
E42/E45 Main/safety brake contactor feedback fault	00: Contactor does not suck	<ul style="list-style-type: none"> • Check the inverter output contactor/safety brake contactor and wiring • Set F03.19 (contactor test)
	01: Contactor welding	
E47/E48/E50/E51 Escalator external hardware fault 1 - 4	/	<ul style="list-style-type: none"> • Check wiring • Check the escalator
E49 Fire alarm	/	<ul style="list-style-type: none"> • Check wiring • Troubleshoot safety board
E53 Safety board abnormality	/	
E55 Escalator safety switch abnormality	00: Lower safety switch	<ul style="list-style-type: none"> • Check wiring • Check the group F05 parameter settings
	01/21: Down/up key stop switch	
	02/03: DN right/left finger switch	
	04/05: DN right/left comb switch	
	06/07: DN right/left skirt switch	
	08/28: Lower/upper sink switch	
	09/10: DN right/left step chain switch	
	11 - 15: Lower spare switch 1 - 5	
	20: Upper emergency stop button	
	22/23: UP right/left finger switch	
	24/25: UP right/left comb switch	
	26/27: UP right/left skirt switch	
	29: Upper drive chain switch	
30: Motor temperature		
31: Upper handrail break switch		
32/33: Upper spare switch 1/2		
E94 Lower panel CAN communication abnormality	/	<ul style="list-style-type: none"> • Check wiring
E95 SPI communication abnormality	/	

Reset Fault (Any Action)

- Press the **STOP** key on the keypad.
- External reset terminal (X terminal is set to No. 29 function).
- After the control panel is completely powered off, power up again.

Troubleshooting (MT70-PES-E1 Escalator Safety Board)

Safety Board Fault

Fault	Fault Subcode	Counter-measures
E01 Overspeed 1.2 times	01: Overspeed 1.2 times	• Correctly set F00.00 - F00.03
E02 Overspeed 1.4 times	01: Overspeed 1.4 times	
E03 Non manipulation reversal	01: Non manipulation reversal	• Check the elevator speed detection signal (X15, X16) or the up and down signals (X3, X4), confirm the wiring is correct
E04 Stop overrun fault	01: Stop overrun fault	• Correctly set F00.06
E05 (E06) Abnormal speed of left (right) handrail	01/02: Left (right) handrail under/overspeed	• Correctly set F00.04, F00.05 • Check the speed measurement signal of handrail and confirm it is normal
E07 Missing upper step	01: Missing upper step	• Check the value of F00.07, F00.08 and confirm F00.08 ≤ the actual value ≤ F00.07
E08 Missing lower step	01: Missing lower step	
E09 (E10) Abnormal working (auxiliary) brake	01/02: Switch on the brake, the switch signal 1/2 is invalid 03/04: Disconnect the brake, the switch signal 1/2 is valid	• Correctly set F00.13 • Check the working (auxiliary) brake feedback signal
E11 Floor cover switch	01: Inspection cover switch is invalid	• Correctly set F00.13
E12 Drive chain fault	01: Broken drive chain switch	• Check the switch signal
E13 Abnormal self-test signal	00: Abnormal power signal	• Check or replace the safety monitoring board • Check the safety circuit • Manual reset fault, restart after power off. If there are still faults, contact the manufacturer for maintenance
	01/02: Disconnect Y1, Y2 relay, Y1, Y2/Y5, Y6 feedback signal is valid	
	03/04: When Y1, Y2 relay is in operation, Y1, Y2/Y5, Y6 feedback signal is invalid	
	05: Disconnect the Y3/Y4 relay, the feedback signal is valid	
	06: When Y3/Y4 relay is in operation, the feedback signal is invalid	• Check the terminal signal according to the fault subcode • Set F00.13 reasonably
	08: SPI communication abnormality	
	09: The brake feedback signal is abnormally valid	
	10/11: Working brake 1/2 is abnormally valid 12/13: Auxiliary brake 1/2 is abnormally valid	
E14 Abnormal monitoring signal	14: Drive chain break switch is abnormally valid	• Contact the manufacturer for maintenance
	15: Slave fault self-test error	
	01/02: Y1, Y2 relay operation/disconnection abnormality	• Set F00.07, F00.08 reasonably • Check AB speedometer, step sensor signal • Set F00.13 reasonably • Check up and down (X3/ X4) signals
	03/04: Y3, Y4 relay operation/disconnection abnormality	
	05: Pulses number between upper steps < actual steps lower limit	
06: Pulses number between lower steps < actual steps lower limit		
07: Up and down signals are valid at the same time > 4s		

Fault	Fault Subcode	Counter-measures
E14 Abnormal monitoring signal	08: When stopped, the high speed command is valid > 4s	• Set F00.13 reasonably • Check the brake feedback (X5) /high speed (X13) signal
	09: The fault reset switch is stuck for a long time	• Set F00.13 reasonably • Check the fault reset (X14) signal
	10: The status of the two inspection signals is inconsistent	• Set F00.13 reasonably • Check access cover switch, confirm X11/ X12 are not sticking
	11/12: When normal, after 10s stop, there is A/ B phase pulse signal	• Check AB speed sensor signal
	13/14: When normal, after 5s start, there is no A/B phase pulse signal	
	15/16: During operation, the A/B phase pulse signal is abnormal	
E15 The main and auxiliary signals are inconsistent, software and hardware diagnostic faults	01: Model series error	• Manual reset fault, restart after power off. If there are still faults, contact the manufacturer for maintenance
	02: Hardware version identification error	
	03/04: Software version 1/2 error	
	05: Software test version error	
	06: Software internal test version error	
	07: Software date error	
	08/09: Inconsistent A/B phase ladder speed	
	10/11: Unstable left/right handrail signal	• Correctly set group F00
	12/13: Unstable pulse number of main and auxiliary upper step A/B	
	14/15: Unstable pulse number of main and auxiliary lower step A/B	
	16: Inconsistent running direction	
	17: Inconsistent stop brake distances	
	18: X1 - X14 input signals are inconsistent	
	19/20: Y1 - Y4 feedback/output signals are inconsistent	
	21: Unstable power signal	
	22: Inconsistent system state	
	23/24: Main and auxiliary chip communication error	
	30: Power-on RAM check error	
	31: EEPROM read abnormality	
	40: The setting of the braking distance parameter error	
41: The setting error of upper and lower step thresholds		
42: Abnormal reading of AB pulse number between steps		
43: Parameter error		
44: Self-learning step speed is too fast	• Check sensor signal	
45: Motor speed self-learning failed	• Check the step sensor signal for stability	
46: Handrail speed self-learning failed	• Correctly set F00.00	

Reset Fault

- E11 (floor cover switch fault): In normal mode, auto reset.
- Other faults: Long press the **reset switch (X14)** for 2s.

Terminal Wiring

