

EPB-Series

Electronic Parking Brake Switch

PRODUCT WEBPAGE

request sample, configure part, watch video



The EPB-Series is a configurable electronic parking brake switch for 12/24 VDC systems. Featuring IP54-rated sealing of above-panel components and an electrical endurance rating of 1,000,000 cycles, the EPB-Series switch is ideal for commercial vehicles. The durable EPB switch can be configured with parking brake only, parking brake with auto hold, or parking brake with auto hold and trailer brake functions. In addition, there are multiple options for configuring the switch for hardwired signals or SAE J1939-compliant CAN protocol.

12/24 VDC **1,000,000** Operations **IP54 Sealing** for above-panel components

Typical Applications

- Work Trucks
- Commercial Vehicles
- Construction Equipment
- Agricultural Equipment

Tech Specs

Electrical

Operating Voltage	Designed for 12/24 VDC systems
Electrical Endurance	Operating 1,000,000 cycles, Rate 15~20cycles/minute, with 28V 100mA, 20% at 85°C, 20% at -40°C, 60% at 25°C. Force deviation <30%
Over Voltage	ISO 16750-2; 36V DC for 60 minutes at 65°C
Reverse Polarity Protection	ISO 16750-2; Apply -28VDC for 60s
Withstand Voltage	ISO 16750-2; 550Vrms with a duration of 60s
Abnormal Supply Voltage	ISO 16750-2; DC9V, 16V, 18V, 32V
Functional Safety	Not compliant, MCU and hall sensor ISO 26262 ASIL B grade
Initial voltage drop of contacts (hardwire version only)	< 1mV at 100mA

Mechanical

Structural Characteristics	Put 98N force on the outside surface, contact area more than 1cm ² , stay for 60s
Vibration	IEC 60068-2-6; Amplitude 1.2mm (10~25Hz), Accelerate 30m/S ² (25~500Hz), Sweep 1oct/min, each axis 8 hours
Drop Test	IEC 60068-2-31; Free fall test in each direction of the 3 axis (6 surfaces) from 1000mm, each specimen 3 times (total 18 drops)

Electromagnetic (CAN version only)

ESD	ISO 10605; +/-15kV air discharge, +/-8kV contact discharge
Radiation Immunity-ALSE	ISO 11452-2; Absorbed-lined chamber 75V/m, Frequency 80MHz to 3GHz, Class A
Bulk Current Injection	ISO 11452-4; 75mA, 1MHz to 400MHz, Class A
Transient Conduction -Supply Line	ISO 7637-2:2004; All test pulse in Annex A Table A2, pulse 1/2b-Class C, pulse 2a/3a/3b/4/5a-Class A
Transient Conduction -Signal Line	ISO 7637-3:2007; Test method CCC and ICC. Annex B, level III, Class A
Portable Transmitters	ISO 11452-9:2012; Frequency 360MHz~5.925GHz. Test sample surface and wiring harness, Class A
Immunity to Magnetic Fields	ISO 11452-8:2015; Frequency 15 to 150,000 Hz. Internal field: Annex A2.2, level III. External field: Annex A2.3, level III, Class A
Conducted Emission	CISPR 25:2016; Voltage method: Section 6.3.4, Frequency band 0.15MHz~108MHz, Test severity level III Current probe method: Section 6.4.3, Frequency band 0.15MHz~245MHz, test severity level III
Radiated Emission	CISPR 25:2016; ALSE method: Section 6.5.4, Frequency band 0.15MHz~2500MHz, test severity level III

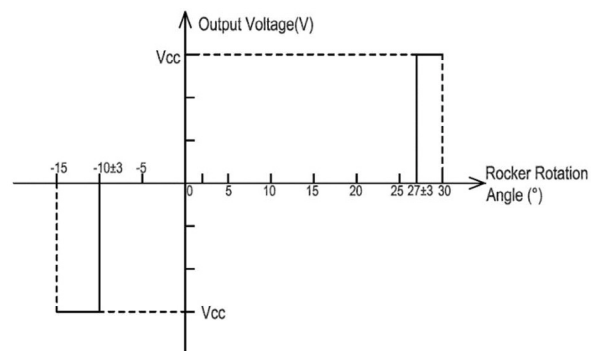
Environmental

Operating Temperature	-40°C to +85°C
Storage Temperature	-40°C to +85°C
Thermal, Hot Soak	IEC 60068-2-2; Test Bb, 95°C for 2 hours, down to 65°C with rate 1°C/min, then stay for 1 hour
Thermal, Cold Soak	IEC 60068-2-1; Test Ab, - 50°C for 2 hours, up to -40°C with rate 1°C/min, then stay for 1 hour
Thermal Shock	IEC 60068-2-14; Test Na, - 40°C to +85°C 5 cycles for 10 hours
Solar Radiation	ISO 4892-3; 200 hours, test method B Cycle 5, 0.76W/m ² *nm at 340nm, BP temp. 50±3°C
Ingress Protection	IEC 60529; IP54, for above-panel components of actual switch
Salt Spray	IEC 60068-2-11; Test Ka, test continuously for 96 hours with 5% NaCl solution
Chemical resistance	ISO 16750-5; Engine oil, Diesel fuel, Glass cleaner, Medicinal alcohol, Brake Fluid. Load 10N, brushing with cotton cloth 100 cycles, rate 30 cycles/min
Environmental Protection	Formaldehyde; <10mg/kg TVOC; <50µg C/g Benzene; <5µg/g Methylbenzene; <5µg/g Xylene; <15µg/g Condensable components; <2mg Odour level; (23°C/40°C) ≤3 Odour level; (80°C) ≤3.5

Physical

Limit Switch	Micro switch, two channels
Illumination	LED backlit icon, dimmable illumination, controlled by CAN messages
Operating Force	8N±3N
Weight	102 grams
(CAN version only)	
Angle Sensor	Hall sensor, two channels
Angle Resolution	0.15°
CAN Protocol	SAE J1939 compliant
Baud Rate	250-500Kbps

Schematic diagram of output voltage Vs Rocker Rotation Angle:



GPS-0023 Rev A, GPS-0024 Rev A
*Manufacturer reserves the right to change product specification without prior notice.

Ordering Scheme

Sample Part No. **EPB - 1 A 1 A 156 A**

Selection 1 2 3 4 5 6 7

1. SERIES

EPB Electronic Parking Brake Switch

2. SIGNAL TYPE

- 1 CAN Version, J1939, 250k Baud Rate
- 2 CAN Version, J1939, 500k Baud Rate
- 3 Hardwire Version, Rated Voltage 12VDC
- 4 Hardwire Version, Rated Voltage 24VDC

3. SWITCH FUNCTION See diagram below

- A Electronic Parking Brake
- B Electronic Parking Brake Auto Hold
- C Electronic Parking Brake Auto Hold + Trailer Brake

4. INDICATOR COLOR

- 1 Orange

[Configure Complete Part Number >](#)

5. BACKLIGHT COLOR

- A White

6. SOURCE ADDRESS

- 000 Hardwire Version
- 156 CAN Version - Default Source Address ¹

7. CONNECTOR 2,3,4

	Manufacturer	Manufacturer Pin	Number of Pins
A	TE	174051	12
B	TE	174053	16

Notes:

1. Unique numbers from 001 to 248 in decimal
2. Mating 12-pin plug TE 174045, mating 16-pin plug TE 174046
3. Hardwire version: 12-pin available with switch function codes A, B; 16-pin available with switch function code B, C
4. CAN version: available ONLY with 12-pin

Switch Function

PARKING BREAK ONLY



PARKING BREAK WITH AUTO HOLD

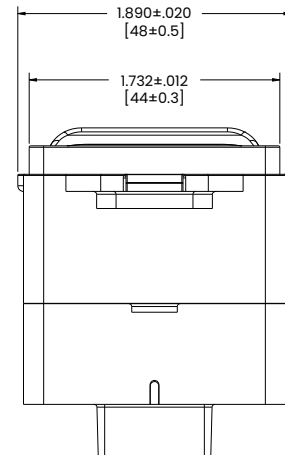
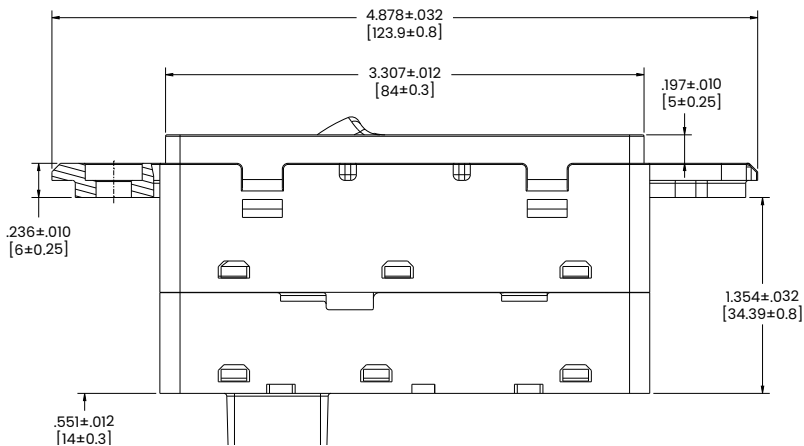
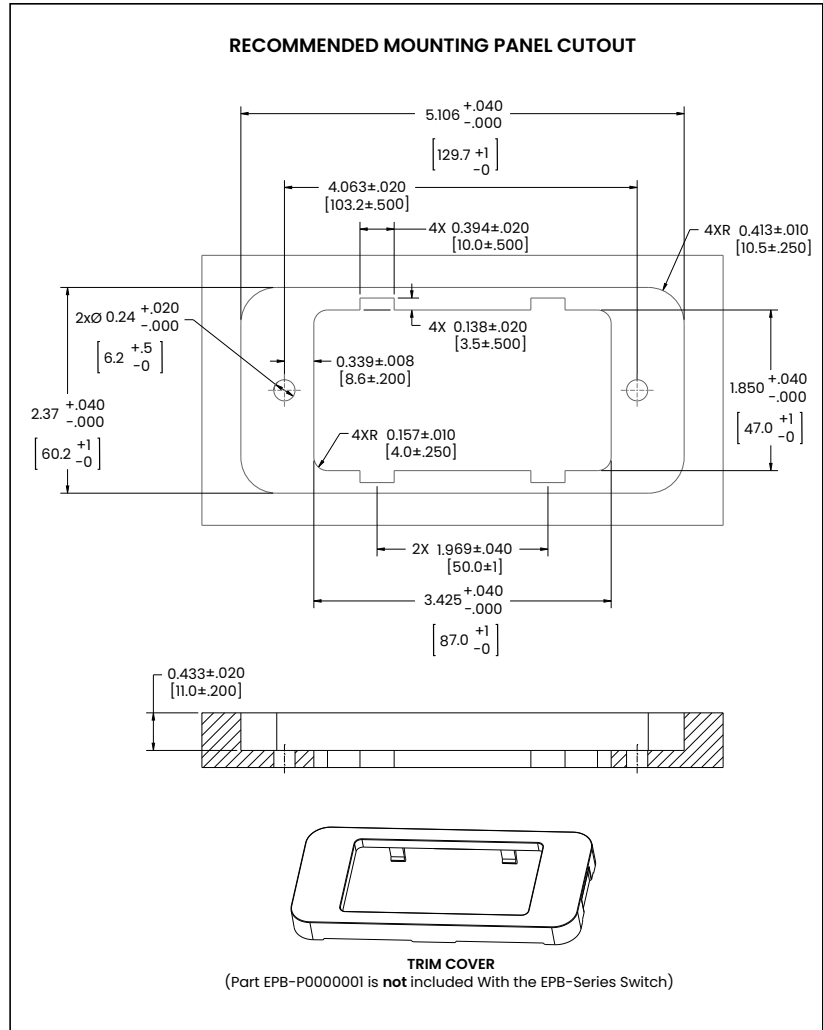
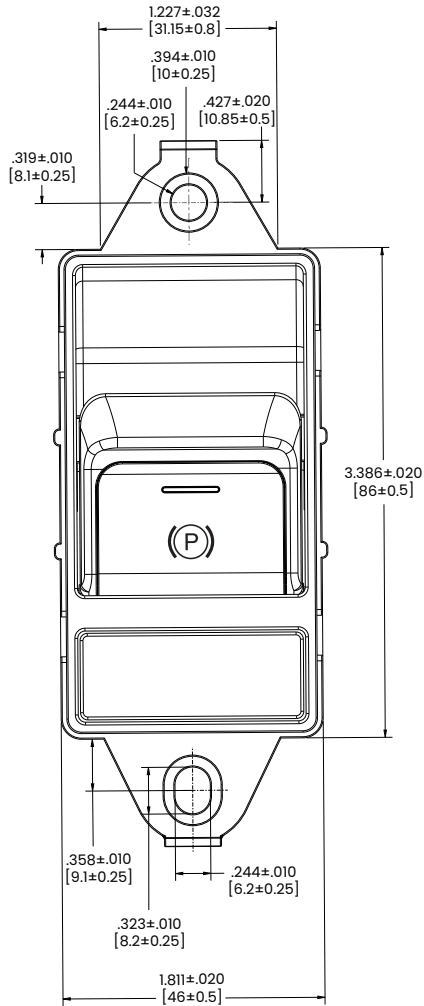


PARKING BREAK WITH AUTO HOLD AND TRAILER BRAKE



Dimensional Specs

inches [millimeters]



Circuit Diagrams & Schematics

PARKING BREAK ONLY

Mates with TE/AMP 040 Multi-Lock Series Connector Part Number 174045

EPB-10001001
(MFG DATE CODE)
(SERIAL NUMBER)

QR CODE

LASER MARKING INFORMATION

PIN OUT AS SHOWN	
PIN NO.	DESIGNATION
1	APPLY SW_NO
2	APPLY SW_NC
3	APPLY SW
4	RELEASE SW_NC
5	RELEASE SW
6	RELEASE SW_NO
7	GND_BL
8	PWR_BL
9	PWR_IL
10	GND_IL
11	NULL
12	NULL

ELECTRICAL SCHEMATIC

PARKING BREAK WITH AUTO HOLD

Mates with TE/AMP 040 Multi-Lock Series Connector Part Number 174045

EPB-10001002
(MFG DATE CODE)
(SERIAL NUMBER)

QR CODE

LASER MARKING INFORMATION

PIN OUT AS SHOWN	
PIN NO.	DESIGNATION
1	Apply SW_NO
2	Apply SW_NC
3	Apply SW
4	Release SW_NC
5	Release SW
6	Release SW_NO
7	PWR_IL_AH
8	PWR_BL
9	PWR_IL_BRK
10	GND
11	AH_IN
12	AH-OUT

ELECTRICAL SCHEMATIC

PARKING BREAK WITH AUTO HOLD AND TRAILER BRAKE

Switch Connector equal to TE/AMP 040 Multi-Lock Series 174053-2 Mating Plug TE 174046-2

EPB-10001003
(MFG DATE CODE)
(SERIAL NUMBER)

QR CODE

LASER MARKING INFORMATION

PIN OUT AS SHOW	
PIN NO.	DESIGNATION
1	AH SW
2	APPLY SW C
3	APPLY SW_NO
4	APPLY SW_NC
5	RELEASE SW_NC
6	RELEASE SW_NO
7	RELEASE SW C
8	TB SW
9	AH_OUT
10	PWR_IL_AH
11	PWR_BL
12	GND_BL
13	PWR_IL_BRK
14	GND_IL
15	PWR_IL_TB
16	TB_OUT

ELECTRICAL SCHEMATIC

PARKING BREAK WITH CAN

Switch Connector equal to TE/AMP 040 Multi-Lock Series 174051-2 Mating Plug TE 174045-2

EPB-00001005
(MFG DATE CODE)
(SERIAL NUMBER)

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LASER MARKING INFORMATION

PIN OUT AS SHOWN	
PIN NO.	DESIGNATION
1	POWER
2	CAN_H
3	CAN_L
4	GND
5	NULL
6	NULL
7	NULL
8	NULL
9	NULL
10	NULL
11	NULL
12	NULL

ELECTRICAL SCHEMATIC