



# e-TRANSPORTATION

# e-TRANSPORTATION

For several years, APEM has been collaborating with startups and large mobility companies. We understand that while budget and time constraints remain, electrification, autonomous driving and shared mobility bring new challenges such as ease of use, connectivity and increased safety.

APEM has developed a unique know-how and offers not only support in the design phases but also one of the broadest ranges of HMI solutions built with pushbuttons, toggle switches, indicators, control panels and joysticks.



## INNOVATIVE AND SAFE HMIs





# A BROAD RANGE OF PRODUCTS AND SOLUTIONS

## APEM OFFERS

### 1 ONE-STOP SHOP HMI SUPPLIER

PANEL SWITCHES



E-STOPS



LED INDICATORS



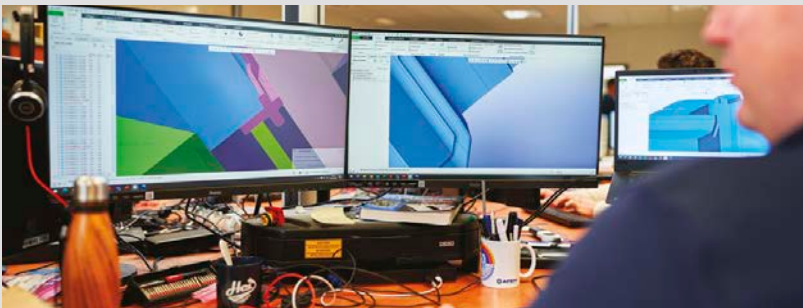
JOYSTICKS & THUMBWHEELS



PANEL SOLUTIONS



### 2 CUSTOMER SUPPORT IN THE DEVELOPMENT



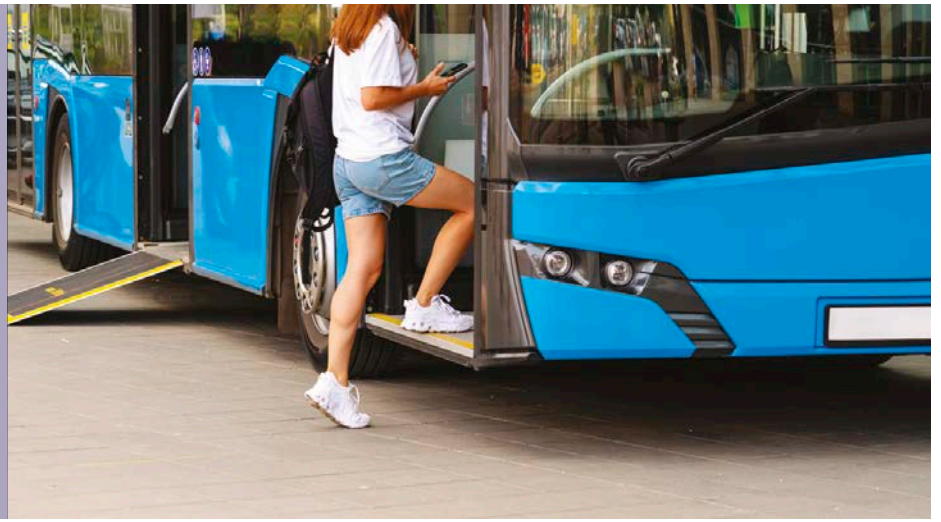
APEM has a solid track record of providing technical and user experience support to companies during key design phases. Our knowledge of current and future HMI trends covers several industries. This knowledge puts us in a position to help companies navigate between several constraints and goals.

### 3 CAPACITY TO BUILD CUSTOM SOLUTIONS

Our teams guide you in designing customized solutions to enhance safety, simplify controls, or integrate advanced functions. Colors, markings, finishes, shapes and dimensions... APEM provides customization for an unlimited combination of possibilities.



# YOU HAVE SPECIFIC NEEDS WE HAVE INNOVATIVE AND SAFE SOLUTIONS



## ERGONOMIC AND ROBUST SOLUTIONS

To build user-friendly and long-lasting HMIs

### PUSHBUTTONS

Our pushbuttons are designed to provide excellent tactile feeling and withstand the harshest environments. These compact and robust pushbutton switches can be customized to match your application.



## CONTROL

Driven by innovation

### JOYSTICKS

Discover how our range of joysticks helps mobility professionals to control an autonomous vehicle during maintenance-related tasks.

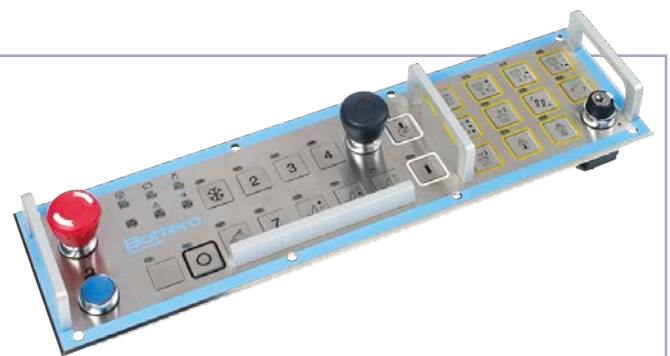


## SAFETY

To comply with safety norms

### E-STOPPS

In the Mobility market, it is essential to be able to stop a vehicle in case of issues. Our e-stops enable anyone to safely stop or disconnect a vehicle.



## CUSTOMIZATION

For a simplified & unique experience

### CONTROL PANELS

We understand that HMIs must simplify the way operators interact with a vehicle. By leveraging our experience, we can help you build a unique, robust and reliable control panel, perfectly designed for your requirements.

# HOW OUR PRODUCTS ARE USED

## BICYCLES, SCOOTERS, DOCKING STATIONS, ...



**Q SERIES**  
LED indicators for good  
visibility in daylight



**AV SERIES**  
Rugged start and stop  
Metal pushbuttons



**PBA SERIES**  
Piezo switches  
for outdoor  
environments



**FD SERIES**  
Double icon illuminated  
pushbutton switches



**IP SERIES**  
Compact pushbutton switches



**QH SERIES**  
Halo LED  
illumination



**CW SERIES**  
Compact thumbwheels



**MEC 5G SERIES**  
Microswitches



**IX SERIES**  
Compact  
pushbutton switches



**EC SERIES**  
Ultra compact  
emergency stop  
switches



## DELIVERY VANS, E-BUSES, ...



**FNR SERIES**  
Designed for easy  
forward & reverse  
control



**EC SERIES**  
Ultra compact  
emergency stop  
switches



**PADDLES**  
Used to switch  
gears



**MEC 5G  
SERIES**  
Microswitches



**HR SERIES**  
Roller available  
with many options



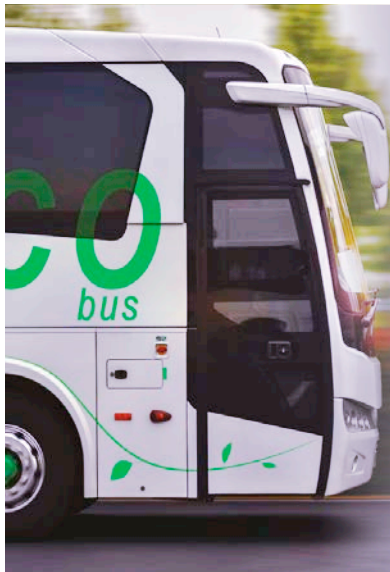
**CW SERIES**  
Compact  
thumbwheels



**AV SERIES**  
Rugged start  
and stop metal  
pushbuttons



**KR SERIES**  
Rocker switches



## AUTONOMOUS SHUTTLES, TRAINS, ...



**IP SERIES**  
Compact  
pushbutton  
switches



**3000 SERIES**  
Compact, precision  
hall effect technology  
for maintenance  
operations



**IX SERIES**  
Compact  
pushbutton  
switches



**XA SERIES**  
«Safe break action»  
Technology



**QH SERIES**  
Halo LED  
illumination



**XP SERIES**  
Mid-size hall  
effect joysticks



**CW SERIES**  
Compact  
thumbwheels



**CUSTOM SOLUTIONS**  
Tailored-made  
HMI solutions



# APEM RELIABILITY

- MOST PRODUCTS SEALED UP TO IP67/IP69K
- PUSHBUTTONS WITH MEMBRANE TO PROTECT AGAINST DUST
- OPERATING TEMPERATURE: -40°C TO +85°C (-40°F TO 185°F)
- E-STOPS WITH REVERSE ENERGY STRUCTURE FOR ADDITIONAL SAFETY
- VERTICALLY INTEGRATED MANUFACTURING



We can support your functional safety requirements to comply with safety norms (ISO26262, ISO13849-1, ...). Many APEM products are suitable for use within a safety-related environment. Some of our products continuously perform self-monitoring against any potential internal failure. Depending on your project, our engineers can provide and explain what we can offer using B10d and MTTFd to meet your SIL or PL requirements.

## SOME OF OUR LATEST PROJECTS INCLUDE:

### ELECTRIC DELIVERY VANS USED BY SEVERAL EU-BASED POSTAL SERVICES

We supplied the anti vandal AV pushbutton used to secure access to the payload, and the BF paddle to switch engine mode.



### AIRPORT AUTONOMOUS SHUTTLES

We provided all the HMIs needed for the engineer and steward panel located inside the vehicle. Products supplied: CW, XA, IP.



### ELECTRIC SCOOTERS

We built a custom CANbus keypad with light indicators and display used to unlock a shared electric scooter for ride sharing.



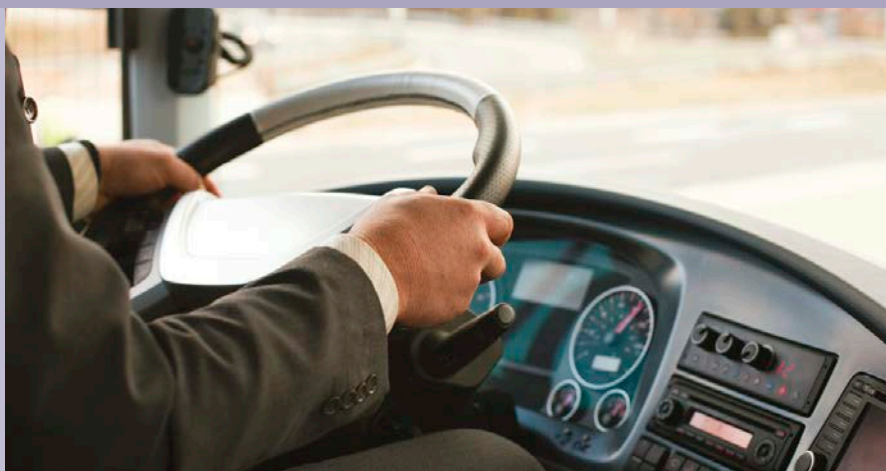


## BIKE SHARING STATIONS

We developed a robust and ultra bright piezo switch for daylight use. The switch is used to unlock the bike.

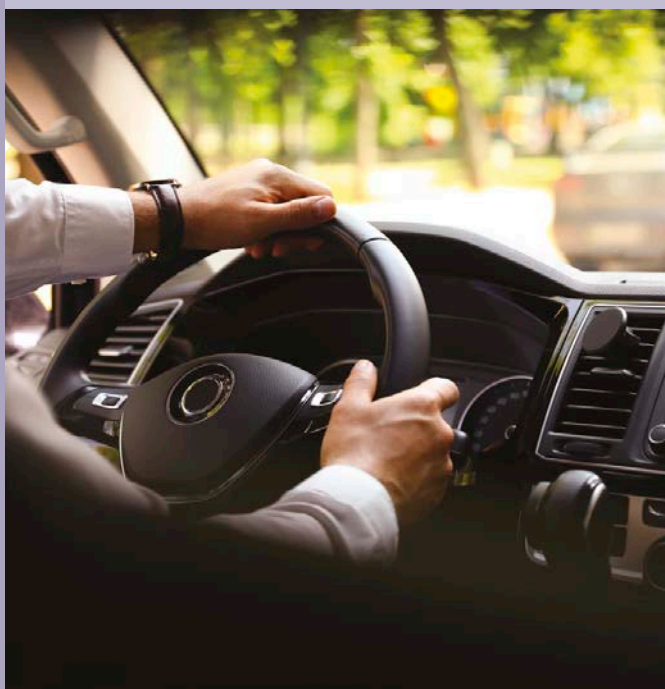
## LONG-DISTANCE BUSES

We deliver MEC microswitches and switchguards to a leading EU-based bus manufacturer. Our products have been selected due to their long lifecycle.



## ELECTRIC TAXI CABS

We collaborate with one of the few EV taxi manufacturers. Our illuminated IP69K FP pushbutton is used to control a specific function of the vehicle. The manufacturer particularly appreciates its design.



## ROAD LEGAL ELECTRIC UTILITY VEHICLES

We provide a leading utility vehicle manufacturer with both the KR rocker switch and I series. Being a one-stop shop for HMIs helps our customer simplify its supply chain.



# OUR PRODUCTS






WHETHER IT'S A STANDARD  
PRODUCT OFFERING OR A  
CUSTOMIZED SOLUTION, LET  
APEM PUT ITS DECADES  
OF e-TRANSPORTATION  
EXPERIENCE TO WORK  
FOR YOU.

## CONTENT















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# AV SERIES

## METAL PUSHBUTTON

**TOP APPLICATIONS:**  
BICYCLE-SHARING SYSTEMS, UTILITY VEHICLES, PEOPLE MOVERS, E-CARGOS



## START AND STOP PUSHBUTTON

- Robust pushbutton
- Stainless steel actuator and bushing
- Appealing aesthetics
- Easily customizable: marking, illumination

SERIES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING	ILLUMINATION
AV	NO/NC	1A 30VDC	Ø19 mm Ø22 mm Ø30 mm	Solder lugs, quick-connect, PCB, flying load, cable	Panel	IP67	X



# PBA SERIES

## ROBUST PIEZO SWITCH

**TOP APPLICATIONS:**  
BICYCLE-SHARING SYSTEMS, UTILITY VEHICLES, PEOPLE MOVERS



**ROBUST AND ULTRA-BRIGHT PIEZO SWITCH:  
IDEAL FOR OUTDOOR APPLICATIONS**

- IK06
- 316L Stainless Steel, PC light diffusor
- Super bright RGB ring illumination
- 1,5M+ life cycles

SERIES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING	ILLUMINATION
PBA	1 pole	200mA, 24V AC/DC	16mm, 19mm, 22mm, 30mm	Wire + Polex connector	Screw	IP68, up to IP69K front panel sealing	RGB super bright

# FNR SERIES

## FNR ROCKER SWITCH

TOP APPLICATIONS:  
UTILITY VEHICLES, LAST-MILE DELIVERY VANS



## FOR EFFORTLESS FORWARD/REVERSE CONTROL

- 2 or 3 positions (momentary or maintained)
- Sealed up to IP69K
- Illumination with marking
- 1 NO/NC in each direction
- SIL2 / PLd capable

SERIES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING
FNR	2	1A /24V	Ø20 mm (787 in)	Flying leads, solder lugs	Panel	IP69K



# FD SERIES

## DOUBLE ICON ILLUMINATED PUSHBUTTON SWITCH

TOP APPLICATIONS:  
UTILITY VEHICLES, LAST-MILE DELIVERY VANS



## DOUBLE ICON ILLUMINATED PUSHBUTTON

- 3 standard legends (0/1, START/STOP, ON/OFF)
- Sealed up to IP69K
- Threaded or snap-in versions

SERIES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING	ILLUMINATION
				Solder lugs			
FD	1,2	4A 12VDC 200mA 12VDC	Ø24 (.944) Ø26 (1.024)	X	Panel, Snap-in or threaded bushing	IP69K (threaded bushing)	X

# KH SERIES

POWER ROCKER SWITCH WITH PROTECTION GUARD

TOP APPLICATIONS:  
UTILITY VEHICLES, LAST-MILE DELIVERY VANS



PROTECT AGAINST INADVERTENT ACTIVATION, CUSTOMIZABLE

- Available on 2 or 4 sides
- Customized laser etched legends
- Illuminated versions
- Sealed up to IP68/IP69K

SERIES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	MOUNTING OPTIONS	TERMINAL OPTIONS			SEALING	ILLUMINATION
					Solder lugs	Quick connect	Screw		
KH	1,2	10 A 24 VDC	36.8 x 21.08 mm	Panel	X	X	X	IP69K	X



# KL SERIES

## LOCKING POWER ROCKER SWITCH

TOP APPLICATIONS:  
UTILITY VEHICLES, LAST-MILE DELIVERY VANS



## INTUITIVE UNLOCKING

- Field proven reliability
- Solid construction
- Elastomer membrane option
- Intuitive ergonomics
- Easy-operation one hand activation

SERIES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	MOUNTING OPTIONS	TERMINAL OPTIONS			SEALING	ILLUMINATION
					Solder lugs	Quick connect	Connector		
KL	1,2	10A 24VDC	36.8 x 21.08 mm	Panel	X	X	X	IP69K	X

# IP SERIES

## COMPACT PUSHBUTTON SWITCH

**TOP APPLICATIONS:**  
E-BIKES, E-SCOOTERS, UTILITY VEHICLES, ELECTRIC BUSES



## PUSHBUTTON SWITCH FOR HARSH AND OUTDOOR ENVIRONMENTS

- High performance pushbuttons
- Largest selection of color, shapes, terminals, markings, backlighting
- Unified look, differentiated functions, simplified purchasing

SERIES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS							MOUNTING OPTIONS	SEALING	ILLUMINATION
				Solder lugs	Quick connect	Screw	PCB	Flying leads	Wire Wrap	Cable			
IP	1	5A 28VDC 4A 17VDC	Ø12 (472)	X	X		X	X			Panel	IP67	X



# IA / IX SERIES

## DUSTPROOF PUSHBUTTON SWITCHES

**TOP APPLICATIONS:**  
E-BIKES, E-SCOOTERS, UTILITY VEHICLES, ELECTRIC BUSES



**IA: EXCELLENT TACTILE FEEDBACK**

**IX: COMPACT PUSHBUTTON WITH BACKLIGHTED LOGOS**

### IA

- Dustproof: Membrane on top with no gap between actuator and panel
- Frost, sand and hydrocarbon resistant
- Flush on panel
- Sealed up to IP67
- SIL2/PId capable

### IX

- Dustproof: Membrane on top with no gap between actuator and panel
- Frost, sand and hydrocarbon resistant
- Flush on panel
- Sealed up to IP67/IP69K
- Available with backlit marking
- SIL2/PId capable

SERIES	MECHANICAL CYCLES	APPROVALS	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING	ILLUMINATION
IA	1M cycles	N/A	NC/NO	2A 24VDC	Ø16 mm (.629)	Flying leads	Panel	IP65, IP67	No
IX	1M cycles	N/A	NO+NC	2A 28VDC	Ø12 mm (.472)	Solder lugs, wires	Panel	IP67, IP69K	Yes

# ES SERIES

## HEAVY DUTY METAL STOP SWITCH

**TOP APPLICATIONS:**  
AUTONOMOUS SHUTTLES, UTILITY VEHICLES, E-CARGOS



## METAL SAFETY SWITCH

- Sealed up to IP65, IP67 & IP69K
- Compact body, Complies with EN609447-5-1
- Impact resistant to IK10

SERIES	MECHANICAL CYCLES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING
ES	100 000 cycles	2, 3	1A 24VDC	Ø22 mm, Ø28 mm (.877 in)	Solder lugs, straight PC, wire	Panel	IP65/IP67/IP69K





# XA / XW SERIES

## ROBUST EMERGENCY STOP

### TOP APPLICATIONS:

AUTONOMOUS SHUTTLES, ELECTRIC BIKES, UTILITY VEHICLES, E-CARGOS, PEOPLE MOVERS



## «SAFE BREAK ACTION» TECHNOLOGY

- Exclusive safety technology ensuring that the machinery is stopped if actuator is broken
- Sealed up to IP67
- Compact behind panel
- Available with illumination
- Twist or pull to release

SERIES	SAFE BREAK TECHNOLOGY	PANEL CUT OUT	OPERATOR SIZES	NUMBER OF CONTACTS	TERMINAL CONNECTION	OPERATION	ILLUMINATION
XA	X	16 mm	Ø29 mm (1.141 in), Ø40 mm (1.574 in)	Up to 4 NC: 1,2,3,4 / NO: 0,1	Solder, PCB	Push to lock, pull or turn to reset	Option
XW	X	22 mm	Ø 38 mm (1.496 in) Ø 40 mm (1.574 in) Ø 60 mm (2.362 in)	Up to 4 NC: 1,2,3,4 / NO: 0,1	Screw, solder, PCB	Push to lock, pull or turn to reset	Option

# Q SERIES

## PANEL MOUNT LED INDICATOR

### TOP APPLICATIONS:

E-BIKES, CARTS, SCOOTERS, DISBALED ACESSABILITY - CHAIRS, TRANSPORT, TRAMS BUS & TRAIN, CLEANING - PUBLIC CLEANING EQUIPMENT



## LARGE VARIETY OF SIZES AND COLORS

- Reverse diode protection available
- Wide variety of LED colors
- Wire customization available
- Sealing up to IP67
- Many different panel cut-out sizes
- Available with custom and secret until lit legends

SERIES	PANEL CUT-OUT	MAXIMUM RATINGS	BEZEL STYLES	BEZEL FINISHES	TERMINAL OPTIONS			TYPE OF ILLUMINATION	LED COLORS
					Fastons	Pins	Wire		
Q	Ø6, 8, 10, 12, 14, 16, 19, 22, 25, 30	2VDC -220VAC	Prominent, recessed & flushed	Bright, satin & black	X	X	X	Fixed light, bi-color, RGB	Suitable for in cab use and outside use which are daylight viewable



# QH SERIES

STYLISH INTUITIVE VISUAL FEEDBACK LED INDICATOR

**TOP APPLICATIONS:**  
ELECTRIC BIKES, AUTONOMOUS SHUTTLES, CHARGING STATIONS



## PERFECT FOR BATTERY INDICATOR STATUS

- Zero behind panel depth
- Panel sealed up to IP67
- Ø22 mm oversized version for integration with APEM's range of Emergency Stop Switches and key components
- Ø30 mm version with protection bezel
- Single and RGB colors available, full LED halo illumination
- Illuminate around your switches

SERIES	PANEL CUT-OUT	MAXIMUM RATINGS	LED OPTIONS	MECHANICAL LIFE
QH	16mm 22mm 30mm	12-24VDC	Red, Green, Yellow, Blue, White, RGB, RG, RY, BW	50,000 hours

# XP SERIES

## MID-SIZE PALM JOYSTICK

**TOP APPLICATIONS:**  
AUTONOMOUS SHUTTLES (FOR MAINTENANCE OPERATIONS)



**INNOVATIVE & ERGONOMIC MID-SIZE PALM JOYSTICK:  
PERFECT FOR MANUAL CONTROL OF AUTONOMOUS VEHICLES**

- Robust but compact
- Compact behind panel depth
- Flexible handle configuration
- Sealed electronics
- Choice of four handle types
- Analogue and CAN outputs

SERIES	MECHANICAL CYCLES	AXIS	OUTPUT OPTION	HANDLES OPTIONS	SEALING
XP	10M cycles	2	Analog and CAN bus	UR and MF	IP66



# XD SERIES + RT HANDLE

## HALL EFFECT ROBUST JOYSTICK

**TOP APPLICATIONS:**  
AUTONOMOUS SHUTTLES (FOR MAINTENANCE OPERATIONS),  
PEOPLE MOVERS, UTILITY VEHICLES



## HALL EFFECT ROBUST JOYSTICK

- Joystick designed for heavy duty application
- Highly configurable backplate and faceplate (compatible with most of APEM component)
- SIL2 compatible for safety compliance
- Withstand 400lbs of axial load

SERIES	MECHANICAL CYCLES	AXIS	OUTPUT OPTION	HANDLES OPTIONS	SEALING
XD	10M cycles	2	CAN bus	Ambidextrous & ergonomically angled	IP67

# 3000 SERIES

## PREMIUM HALL EFFECT JOYSTICK

**TOP APPLICATIONS:**  
AUTONOMOUS SHUTTLES, PEOPLE MOVERS, UTILITY VEHICLES



## COMPACT HALL-EFFECT JOYSTICK

• All metal mechanism

• IP66 sealing

• Rated for 10 million cycles

SERIES	MECHANICAL CYCLES	ERGONOMICS	AXIS	TECHNOLOGY	OUTPUT OPTION	MOUNTING OPTIONS	SEALING
3000	10M cycles	Spring to center	1, 2, 3	Hall effect	Single, Dual, Analog, PWM, CAN bus	Drop-in or rear mounting	Up to IP66



# CW SERIES

## PROPORTIONAL THUMBWHEEL

**TOP APPLICATIONS:**  
AUTONOMOUS SHUTTLES (MAINTENANCE PANEL), UTILITY VEHICLES, E-BIKES



## ERGONOMIC CONTROLLER

- Up to 3 million cycles
- Snap-in mounting
- Custom actuator on request
- Spring to center

SERIES	MECHANICAL CYCLES	ERGONOMICS	AXIS	TECHNOLOGY	OUTPUT OPTIONS	MOUNTING OPTIONS	SEALING
CW	3M cycles	Spring to centre	Single	Hall effect	Single, Dual, Analogue, PWM	Snap-in	Sealed electronics

# TS SERIES

PROPORTIONAL HALL EFFECT THUMBSTICK

TOP APPLICATIONS:  
JOYSTICK USED IN VEHICLES



## PRECISION FINGERTIP CONTROL

- Illuminated version available
- Ergonomically designed for repetitive operations over extended periods
- Highly reliable: up to IP67 and IP69K sealing
- Easy integration with rear or drop-in mounting & compact size

SERIES	MECHANICAL CYCLES	ERGONOMICS	AXIS	TECHNOLOGY	OUTPUT OPTIONS	MOUNTING OPTIONS	SEALING
TS	1M cycles	-	1, 2	Hall effect	Single, Dual, Analog, usb	Drop-in or Rear mounting	IP67



# NV SERIES

## NAVIGATOR SWITCH

**TOP APPLICATIONS:  
JOYSTICK USED IN VEHICLES**



## IDEAL AS DISPLAY CONTROLLER

- Compact momentary micro switching thumbstick
- Available with «push to validate» option
- Ideal for navigation in display menu
- Enhanced tactile feedback
- Easy integration in joystick handle
- Sealed up to IP69K

SERIES	MECHANICAL CYCLES	AXIS	BUSHING DIMENSIONS	TECHNOLOGY	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING
NV	1M cycles	1, 2	Ø16 mm (.629 in)	Switching	Wire leads or connector	Panel	IP69K

# HR SERIES

## PROPORTIONAL THUMBWHEEL

**TOP APPLICATIONS:**  
LAST-MILE DELIVERY VANS, UTILITY VEHICLES



## ROBUST AND ERGONOMIC THUMBWHEEL

- Up to 5M cycles
- Electronics sealed up to IP68
- Available with detent, friction, latching and 360° infinite wheel
- 7 colors and 4 shapes in standard
- Illumination of the body in option
- SIL2 / Pld capable
- RGB option available

SERIES	MECHANICAL CYCLES	AXIS	TECHNOLOGY	OUTPUT OPTIONS			MOUNTING OPTIONS	SEALING
				Single	Dual	Analog		
HR	5M cycles	1	Hall effect	X	X	X	Rear mounting	IP68



# BF / BL SERIES

USED TO SWITCH GEARS

TOP APPLICATIONS:  
LAST-MILE DELIVERY VANS, BUSES



## STYLISH AND ROBUST PADDLE FOR VEHICLE DASHBOARD

- Precision hall effect sensing
- Single axis with dual output
- Coloured inserts / trim
- Zero behind panel depth

SERIES	MECHANICAL CYCLES	AXIS	TECHNOLOGY	OUTPUT OPTIONS						MOUNTING OPTIONS	SEALING
				Single	Dual	Analog	PWM	USB	CAN bus		
BHN, BH, BF, BD & BL	5M cycles	1	Hall effect	X	X	X				Rear mounting	IP68

# KP6 CANBUS SERIES

## RUBBER KEYPAD

**TOP APPLICATIONS:**  
AUTONOMOUS SHUTTLES, ELECTRIC BUSES, UTILITY VEHICLES (DASHBOARD)



## STANDARD SOLUTION FOR MULTIPLE BUTTON APPLICATIONS

- CAN bus or direct wiring output options
- CAN solution e-marking qualified (EMI, EMC)
- Backlit and quick front assembly
- Bargraph & indicators available
- Blind usage and glove usage compatible

SERIES	OPERATING VOLTAGE	COMMUNICATION PROTOCOL	MOUNTING	EXTRA FEATURES
KP6 CAN BUS KEYBOARD	12 to 24 VDC	Can J1939 or discrete	Snap-in front mounting	Special illumination/phantom marking/ special key colours



# CUSTOM KEYBOARD

KEYPAD MADE FOR YOUR VEHICLE

ELECTRIC SCOOTERS - AUTONOMOUS SHUTTLES - ELECTRIC BUSES...  
CONFIGURE YOUR PANEL SOLUTION WITH OUR TEAM OF EXPERTS



BATTERY STATUS  
WITH LED RGB INDICATORS

FULLY CUSTOMIZED  
TOUCH: SHAPE,  
MARKING AND  
BACKLIGHTING

STATUS OF BLUETOOTH  
CONNECTIVITY WITH  
SMARTPHONE OR GPS

POWER ASSISTANCE  
LEVEL MONITORED  
WITH SECRET-TIL-LIT  
TECHNOLOGY

APEM develops complete control solutions combining components (joysticks, LED indicators, switches, keypads), standard electronic boards and programming for e-transportation applications.

For each project, our team of experts takes into account your specific requirements and other parameters, including products that comply with standards such as IP67, IP69K, RED, EMC, REACH, and ROHS.

We also offer energy-efficient HMIs with a range of connectivity options, including **CAN protocol for electric assist**, **BLE protocol for smartphone and GPS integration**, and **UART protocol for battery communication**.



**APEM**  
an IDEC company  
**AT A GLANCE**

 **70** YEARS OF TRUST BUILT ON QUALITY

 **1,400** EMPLOYEES WORLDWIDE

 **50,000 +** PART NUMBERS

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