



MATERIAL HANDLING VEHICLES & RADIO REMOTE CONTROLS



APEM IN IN MATERIAL HANDLING

The complexity of logistics equipment continues to increase with the addition of new features, and the development of more ergonomic human-machine interfaces. We understand that the goal is always to increase comfort, help raise productivity, and reduce safety risks. Modern warehouses and construction sites have new challenges which material handling professionals need to answer. To help industry leaders adapt their applications to this reality, APEM has developed strong know-how and offers one of the largest ranges of Human-Machine Interfaces, including pushbuttons, toggle switches, indicators, control panels, and joysticks.



ROBUST DESIGN

DEDICATED TO SUPPORTING
YOUR CUSTOM DESIGN



A BROAD RANGE OF PRODUCTS AND SOLUTIONS

APEM OFFERS

1 STANDARD PRODUCTS

PANEL SWITCHES



PCB SWITCHES



LED INDICATORS



JOYSTICKS



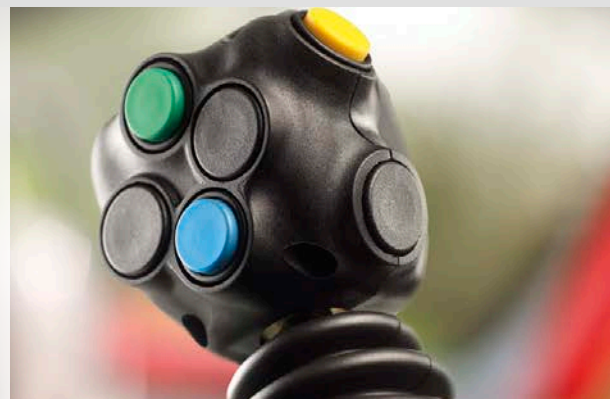
PANEL SOLUTIONS



2 CUSTOMIZED PRODUCTS

APEM engineers will propose the best ergonomics, shape, marking, backlighting, material, waterproofing and connection... in line with your expectations and environment.

APEM can propose fully customized products ("customer exclusive") or a custom design with already qualified HMI components, joystick handles and joystick bases.



3 CAPABILITY TO BUILD PANEL SOLUTIONS



APEM has developed a unique expertise in the creation of integrated custom-made control panels and remote controls.

**YOU HAVE
SPECIFIC
NEEDS,
WE HAVE
DEDICATED
SOLUTIONS**



ROBUSTNESS

is essential in building trust with the machine.

12000 SERIES

Material handling professionals need to trust their equipment. Made to withstand the harshest environments, the 12000 series is the robust toggle switch you need to guarantee durability.



LARGE SELECTION

to cover all material handling applications.

I RANGE

APEM is dedicated to providing what is needed to build exactly what you have in mind. Our I range offers many customization options such as actuators shape, sealed, Hall effect, color, etc.

PRODUCTIVITY

driven by innovation.

JOYSTICK

Discover how our range of joysticks helps material handling professionals easily control a growing number of machine functions with precision.



CUSTOMIZATION

For a unique HMI experience.

KEYBOARDS

APEM understands that user experience is key in material handling applications. We help you build your own exclusive and user-friendly keypads, providing a unique machine experience based on your budget and vision.



HOW OUR PRODUCTS ARE USED



EC SERIES
Emergency stop switch



FP SERIES
Illuminated pushbutton

XD RT HANDLE
Ergonomic grip offering a wide selection of functions





AV SERIES
Anti-vandal pushbutton

CUSTOM AND OFF-THE-SHELF KEYPADS
Integrated into dashboard applications





IB SERIES
Sealed pushbutton switch with snap-in mount



3000 SERIES
High-precision contactless joystick



CT SERIES
Toggle switch



IA SERIES
Pushbutton with membrane

CUSTOM KEYBOARD





Q SERIES
Daylight visible LED indicators



MSG SERIES
Switch guard



12000 SERIES
Toggle switch



SEALING BOOT
Toggle & pushbutton boot



BH/BL SERIES
Hall effect joystick and switch function



TS SERIES
Thumbstick proportional two axis joystick in a miniature package

PANEL SOLUTIONS

APEM offers dedicated solutions of complete HMIs or Remote Controls, based on its knowledge about keyboard technologies and their integration, as well as the right selection of high-quality components.

By combining a decades worth of expertise in the material handling market and its environment, APEM provides the most suitable solution to its customers.

TECHNOLOGIES MASTERED BY APEM AND ADAPTED TO MATERIAL HANDLING EQUIPMENT:

Membrane

Elastomeric*

MEC PCB switch panel*

Membrane on PCB*

Metal*



*CANBus Output available

ELECTRONICS & SOFTWARE

PERFORMANCE - APEM's Panel Solutions ensure the highest performance to electronics, environmental and EMC/EMI standards.

EFFICIENT INTEGRATION - APEM designs electronics and connector systems to fit most applications.



COMMUNICATION PROTOCOLS

CAN, (J1939, CANopen),
RS485, RS422, USB...

INTEGRATED BOOT LOADER

Diagnostic and software
upgrade capability

ELECTRONICS AND SOFTWARE DESIGN

LOW POWER

BIT SOFTWARE

Real time Built-In-Test

FILTERING & PROTECTION

ESD, EMI, filter and protection
of network...

INTEGRATED DIMMING

SAFETY

APEM proposes some standard SIL2 compliant components including custom PLx (AgPLx, MPLx, ...), SILx solutions as per customer requests.

CUSTOMER EXCLUSIVE

CUSTOM PRODUCTS
CO-DEVELOPED WITH CUSTOMERS



APEM
EXCLUSIVE

ROBUST JOYSTICK TO WITHSTAND FALLS

EASY TO HOLD

PLUG & PLAY

APEM develops complete interface solutions

combining components (switches, keypads, indicators, joysticks), standard electronic boards and programming.

An APEM team professional is happy to assist you in the development of these complete turnkey solutions, meeting your specific requirements with responsiveness and flexibility.

OUR PRODUCTS

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

CONTENT



PANEL SWITCHES



3500/CT SERIES

9

HIGH PERFORMANCE TOGGLE SWITCH



12000 SERIES

10

PROFESSIONAL GRADE TOGGLE SWITCH



IA SERIES

11

DUSTPROOF PUSHBUTTON SWITCH



IX SERIES

12

COMPACT PUSHBUTTON SWITCH



I SERIES

13

PANEL MOUNT HIGH-QUALITY PUSHBUTTON



IP SERIES

15

COMPACT PUSHBUTTON SWITCH



FP SERIES

16

FULLY ILLUMINATED PUSHBUTTON SWITCH



AV SERIES

17

METAL PUSHBUTTON

PANEL SWITCHES

	FD SERIES	18
	DOUBLE ICON ILLUMINATED PUSHBUTTON	
	13000 SERIES	19
	UNIQUE PUSH/PULL PUSHBUTTON	
	IHS/IHL SERIES	20
	HALL EFFECT PUSHBUTTON RANGE	
	FNR SERIES	21
	FNR ROCKER SWITCH	
	KR/KL SERIES	22
	ILLUMINATED ROCKER SWITCH	
	MW SERIES	23
	PUSHBUTTON SWITCHES	
	CW SERIES	24
	MODULAR AND STYLISH PUSHBUTTON	
	EC COMPACT	25
	ULTRA COMPACT EMERGENCY STOP	
	XW SERIES	26
	EMERGENCY STOP SWITCH	
	ES SERIES	27
	HEAVY DUTY METAL EMERGENCY STOP	
	LB SERIES	28
	FLUSH SILHOUETTE SWITCH	
	SEALING BOOTS	29
	TOGGLE & PUSHBUTTON BOOTS	
	MSG SERIES	30
	SWITCH GUARDS	

JOYSTICKS

	HR SERIES	34
	PROPORTIONAL THUMBWHEEL	
	CW SERIES	35
	PROPORTIONAL MINIATURE THUMBWHEEL	
	XS SERIES	36
	LOW PROFILE FINGERTIP JOYSTICK	
	TS SERIES	37
	PROPORTIONAL HALL EFFECT THUMBSTICK	
	PC SERIES	38
	HANDHELD PENDANT CONTROLLER	
	BD/BF SERIES	39
	HALL EFFECT JOYSTICK PADDLES	
	1000 SERIES	40
	COMPACT SWITCH JOYSTICK	
	3000 SERIES	41
	PREMIUM HALL EFFECT JOYSTICK	
	HF SERIES	42
	MULTI-AXIS HALL EFFECT JOYSTICK	
	XF SERIES	43
	REINFORCED MULTI-AXIS HALL EFFECT JOYSTICK	
	CJ SERIES	44
	MULTIFUNCTION JOYSTICK	
	XD SERIES + RT HANDLE	45
	HALL EFFECT ROBUST JOYSTICK	
	MS SERIES	46
	MID-SIZE HALL EFFECT JOYSTICKS	

LED INDICATORS

	Q SERIES	31
	PANEL MOUNT LED INDICATORS	
	HW1Z SERIES	32
	WATERPROOF COMBINATION BUZZER AND PILOT LIGHT	
	LH1D SERIES	33
	SURFACE MOUNT INDICATORS	

PANEL SOLUTIONS

	KP6 CANBUS KEYBOARD	47
	RUBBER KEYPAD	
	REMOTE CONTROL	48
	PANEL SOLUTIONS	
	COMPLETE DASHBOARD	49
	PANEL SOLUTIONS	

3500/CT SERIES

HIGH PERFORMANCE TOGGLE SWITCH

TOP APPLICATIONS:

TAIL LIFTS, CRANES, WIRELESS REMOTES, LIFT PLATFORMS, SCISSOR LIFTS



MARKET LEADER

- High current rating
- Very broad range: 5 finishes, 6 lever styles, 3 types of locking, 3 types of terminals...
- Sealed up to IP67/IP69K
- Available accessories: guard and boot

SERIES	APPROVALS	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING
3500	CECC	1,2	15A 28VDC	Ø12.2 mm (.49 in)	Solder lugs, quick-connect, screw	Panel	IP67 IP69K
CT	UL	1,2	10A 125/250 VAC	Ø12.2 mm (.48 in)	Solder lugs, quick-connect, screw	Panel	IP67

12000 SERIES

PROFESSIONAL GRADE TOGGLE SWITCH

TOP APPLICATIONS:
CRANES, WIRELESS REMOTES



DESIGNED WITH HIGH PERFORMANCE STANDARDS

- Robust for high specification environments
- Completely sealed construction
- 1, 2 & 3 locking lever positions

SERIES	APPROVALS	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING
12000	CECC/MIL	2, 3, 4	4A 30VDC	Ø11.9 mm (.15/32 in)	Solder lugs, quick-connect, screw	Panel, PCB, through-hole	IP67

IA SERIES

DUSTPROOF PUSHBUTTON SWITCH

TOP APPLICATIONS:

HANDLE CONTROLS, CRANES, WIRELESS REMOTE CONTROLS, SCISSOR LIFTS



LOW PROFILE & HIGH RELIABILITY

- Dustproof: Membrane on top with no gap between actuator and panel
- Frost, sand and hydrocarbon resistant

- Flush on panel
- Tactile feedback
- Low profile, soft membrane actuator

- Sealed up to IP67
- SIL2/PLd capable

SERIES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING
IA	1 NO/NC	2A 24VDC	Ø16 mm (.629 in)	Flying leads	Panel	IP67

IX SERIES

COMPACT PUSHBUTTON SWITCH

TOP APPLICATIONS:
ALL MATERIAL HANDLING VEHICLES



THE NEXT STANDARD

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

SERIES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING	ILLUMINATION
IX	1 NO/NC	2A 28VDC	Ø12 mm (.472 in)	Solder lugs / Wire leads	Panel	IP67/IP69K	X

I SERIES

PANEL MOUNT HIGH-QUALITY PUSHBUTTON

TOP APPLICATIONS:
FORKLIFTS, TELEHANDLERS, ETC.



COMPACT PUSHBUTTON SWITCHES

IM Series

- Snap-action mechanism: audible tactile feedback
- IP67 frontal sealing
- NC+NO function

IZ Series

- Rear mounted
- Plastic or metallic bushing momentary or latching function
- Sealed to IP67

IF Series

- Large pushbutton
- Frost resistant
- IP67 frontal sealing
- threaded or snap-in mounting

IR Series

- IP67 frontal sealing
- Models with microswitches available
- Square or round actuator

IB Series

- Compact: 13mm of behind panel depth
- Lightweight

I SERIES

PANEL MOUNTING HIGH-QUALITY PUSHBUTTON



SERIES	IM	IZ	IF	IR	IB	IS	IL	IC	IQ
MECHANICAL LIFECYCLES	1,000,000								
APPROVALS	UL								
POLES	1								
MAXIMUM RATINGS	(1A 250VAC)* 3 A 28 VDC	up to 4A 48VDC	100mA 48VDC	up to 4A 48VDC	(2A 250VAC)* 100 mA 48 VDC	(2A 250VAC)* 100 mA 48 VDC	2A 24VDC	5A 28VDC	up to 5A 28VDC
BUSHING DIMENSIONS	Ø12 mm (.472 in)	Ø16 mm (.629 in)	Ø16 mm (.629 in)	Ø16 mm (.629 in)	Ø12 mm (.472 in)	Ø12 mm (.472 in)	Ø12 mm (.472 in)	Ø12 mm (.472 in)	Ø16 mm (.629 in)
TERMINAL OPTIONS	PCB, Quick-connect	Solder lugs, Quick-connect, screw, wires	Solder lugs / Quick-connect	Solder lugs, Quick-connect, screw, wires	PCB, Solder lugs, Quick-connect	PCB, Solder lugs, Quick-connect	PCB, Solder lugs, Flying leads	PCB, Solder lugs, Quick-connect, Flying leads	PCB, Solder lugs, Quick-connect, Flying leads, Screw* (* for IQ momentary)
MOUNTING OPTIONS	Panel, threaded	Panel, threaded	Threaded, Snap-in	Threaded	Snap-in	Threaded	Threaded	Threaded	Snap-in
SEALING	IP67	IP67	IP67	IP67	IP54	IP67	IP67	IP67	IP54
ILLUMINATION		X		X			X		X

IS Series

- Compact: 13mm of behind panel depth
- IP67 frontal sealing
- Lightweight

IL Series

- 12mm long threaded bushing up to 10mm panel thickness
- Standard or reduced bushing diameter

IC Series

- Compact: 13mm of behind panel depth
- IP67 frontal sealing
- Metallic bushing

IQ Series

- Snap-in mounting
- Models with microswitches available
- Square or round actuator

IP SERIES

COMPACT PUSHBUTTON SWITCH

TOP APPLICATIONS:

FORKLIFTS, TAIL LIFTS, AERIAL WORK PLATFORMS, RADIO REMOTE CONTROLLERS



DESIGNED FOR HARSH ENVIRONMENTS

- Sealed to IP67 round or square shape

SERIES	MECHANICAL LIFECYCLES	APPROVALS	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING	ILLUMINATION
IP momentary	1,000,000	UL	1	(2 A 250 VAC)* 5A 28VDC	Ø12 mm (.472 in)	PCB, Solder lugs, Quick-connect, Flying leads	Panel	IP67 IP69K	X
IP latching	200,000			(2 A 250 VAC)* 4A 12VDC				IP67	

FP SERIES

FULLY ILLUMINATED PUSHBUTTON SWITCH

TOP APPLICATIONS:
CRANES, BOOM LIFTS, FORK TRUCKS



DESIGNED TO ATTRACT ATTENTION

- Full actuator or symbol illumination
- 24/26/30mm diameters
- Sealed up to IP69K
- Threaded or snap-in versions
- Fully customizable

SERIES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING	ILLUMINATION
FP	1, 2	4A 12VDC 200mA 12VDC	Ø24 mm (.944 in), Ø26 mm (.1.024 in), Ø30 mm (.1.18 in) 20 mm (.787 in)	Solder lugs, flying leads, cable	Panel, Snap-in or threaded bushing	Up to IP69K (except Ø30)	X

AV SERIES

METAL PUSHBUTTON

TOP APPLICATIONS:
CRANES, SCISSOR LIFTS, BOOM LIFTS, FORK TRUCKS



RUGGED METALLIC 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	Ø30 mm (1.18 in)	Solder lugs, quick-connect, PCB, Flying lead, cable	Panel	IP67	X

FD SERIES

DOUBLE ICON ILLUMINATED PUSHBUTTON

TOP APPLICATIONS:
CRANES, BOOM LIFTS, FORK TRUCKS



DOUBLE ICON ILLUMINATED PUSHBUTTON

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

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

13000 SERIES

UNIQUE PUSH/PULL PUSHBUTTON

TOP APPLICATIONS:
WIRELESS REMOTE CONTROLS, HAND-HELD CRANE CONTROLS



ROBUST FOR DEMANDING APPLICATIONS

- Low, behind panel profile
- Quick break contacts
- Anodized actuator, available in multiple colors
- Double shell - sealed construction

SERIES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING
13000	2, 3	4A 28VDC 10A 24VDC	Ø15 mm dia. (.590 in)	Solder lugs	Panel	IP67

IHS/IHL SERIES

HALL EFFECT PUSHBUTTON RANGE

TOP APPLICATIONS:

REMOTE CONTROLS, PALLET JACKS, FORKLIFTS, CRANE CONTROLS, SCISSOR LIFTS



HALL EFFECT TECHNOLOGY

- Long life: 5M cycles
- Momentary (IHS) or proportional (IHL)
- Sealed to IP67

SERIES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING
IHS	5mA 24 VDC	Ø12mm (.472 in)	Flying leads	Panel	IP67 IP69K
IHL	1,25mA 4,5 VDC	Ø12mm (.472 in)	Flying leads	Panel	IP67

FNR SERIES

FNR ROCKER SWITCH

TOP APPLICATIONS:
ALL MATERIAL HANDLING VEHICLES



FOR EFFORTLESS FORWARD/REVERSE CONTROL

- 2 or 3 positions, momentary or maintained
- Sealed up to IP67
- 1 NO/NC in each direction
- Illumination with marking
- SIL2 / PLd capable

SERIES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING	ILLUMINATION
FNR	1 NO/NC	1A 24V	Ø20 mm (.787 in)	Flying leads, solder lugs	Panel	IP69K	X

KR/KL SERIES

ILLUMINATED ROCKER SWITCH

TOP APPLICATIONS:
CRANES, SCISSOR LIFTS, BOOM LIFTS, FORK TRUCKS



SEALED CUSTOMIZABLE ROCKER SWITCHES

- Protected against accidental actuation (KH)
- Patented locking system for safety (KL)
- Illuminated versions
- Customized laser etched legends
- Up to IP68/IP69K

SERIES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING	ILLUMINATION
KR	1, 2	20A 12VDC	36.8 x 21.08 mm	Solder lugs, quick-connect, screw	Panel	IP68 or IP69K	X
KL	1, 2	10A 24VDC	36.8 x 21.08 mm	Solder lugs, quick-connect, screw	Panel	IP68 or IP69K	X

MW SERIES

PUSHBUTTON SWITCHES

TOP APPLICATIONS: APPLICATIONS IN HARSH ENVIRONMENTS



ROBUST AND EFFICIENT

- 2 shapes of pushbutton (flush and mushroom)
- 2 styles of selector switches (lever and knob)
- Available in different colors
- Up to 10 Amps
- IP65 and IP66
- Very long mechanical life: 500 000 cycles.

SERIES	APPROVALS	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING	ILLUMINATION
MW	CE, CCC	Up to 3	Heavy duty (up to 10 Amps)	Ø22 mm (.866 in)	Solder/tab or screw	Panel	IP65, IP66	

CW SERIES

MODULAR AND STYLISH PUSHBUTTON

TOP APPLICATIONS:
ALL MATERIAL HANDLING VEHICLES



SAFETY, STYLE & FLEXIBILITY

- Two-action removal of contact blocks
- Locking lever integrated with guard
- IP20 Finger-safe Terminals
- Sleek and stylish switches with a 2.5mm-thick bezel

SERIES	MECHANICAL LIFECYCLES	APPROVALS	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING	ILLUMINATION
CW Pushbutton/ Indicator	2,000,000	UL, CE, CCC	Up to 6	10A 12VDC	Ø22 mm	Screw or Push-in	Panel	IP65, IP66, IP67	X
CW Keylock/ selector	250,000	UL, CE, CCC	Up to 6	10A 24VDC	Ø22 mm	Screw or Push-in	Panel	IP65, IP66	

EC COMPACT

ULTRA COMPACT EMERGENCY STOP

TOP APPLICATIONS:
ALL MATERIAL HANDLING VEHICLES



A UNIQUE SAFETY LEVEL ON THE MARKET

- Ultra compact bushing dimensions
- Low back panel depth
- Finger safe protection
- Round or triangular actuator

SERIES	APPROVALS	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING
EC COMPACT	UL	2	1.5A/240V	Ø22 mm (.866 in)	Solder lugs, quick-connect	Panel	IP65

XW SERIES

EMERGENCY STOP SWITCHES

TOP APPLICATIONS:
ALL MATERIAL HANDLING VEHICLES



"SAFE BREAK ACTION" TECHNOLOGY

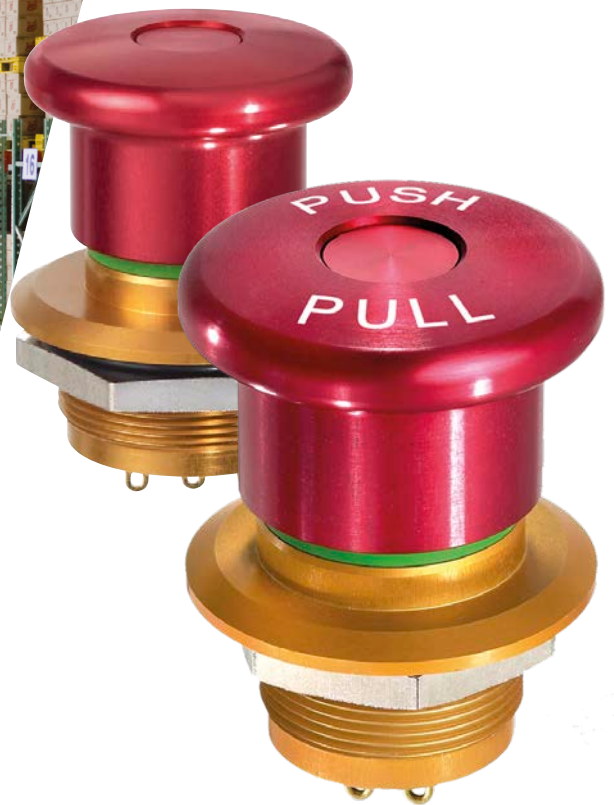
- Space-saving design
- Three operator sizes: ø38, ø40 and ø60 mm
- Exclusive safety technology ensuring that the machinery is stopped if actuator is broken
- Sealed up to IP67
- Available with illumination
- Twist or pull to release

SERIES	MECHANICAL LIFECYCLES	APPROVALS	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING	ILLUMINATION
XW	250,000	UL, CE, CCC, TUV	Up to 4 NC : 1,2,3,4 / NO : 0,1	250V/10A fuse	Ø22 mm (.866 in)	Screw, Solder, PCB	Panel	UP TO IP68	X

ES SERIES

HEAVY DUTY METAL EMERGENCY STOP

TOP APPLICATIONS:
CRANES, SCISSOR LIFTS, BOOM LIFTS, FORK TRUCKS



DESIGNED FOR EXTREME CONDITIONS

- Anodized metal actuator
- Impact resistant to IK10
- Sealed to IP65, IP67 & IP69K
- Locked / unlocked status indicator

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

LB SERIES

FLUSH SILHOUETTE SWITCHES

TOP APPLICATIONS: FORKLIFTS



ERGONOMIC & COMPACT SWITCHES

- Illuminated/non-illuminated lowercase
- 90° 2-position, 45° 3-position
- Round, Square, Rectangular
- Knob or Lever Operator
- Maintained, Spring return from right, Spring return from left, Spring return two-way

SERIES	APPROVALS	MECHANICAL LIFECYCLES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING	ILLUMINATION
LB	UL, CE, CCC, CSA, TUV	250,000	Up to 3	Light duty (gold-plated or silver contacts, up to 5 Amps)	Ø16 mm (.629 in)	Solder/tab or PCB	Panel	IP67	X

SEALING BOOTS SERIES

TOGGLE & PUSHBUTTON BOOTS

TOP APPLICATIONS:
ALL OUTDOOR OR HARSH ENVIRONMENTS



PROTECT AGAINST DUST, SAND & WATER

- Available for toggle and pushbutton switches
- Wide variety of shapes & colors
- Fast customization to accommodate any actuator length
- Available in silicone and neoprene

BOOT MATERIAL	NUT MATERIAL	OPERATING TEMPERATURE		TEMPERATURE RANGE		ELASTICITY	MECHANICAL RESISTANCE
				Low	High		
Neoprene or silicone	Brass, nickel plated, matte black	Silicone	-40°C to +85°C	Best	Best	Best	Good
		Neoprene	-20°C to +50°C	Good	Better	Good	Best

MSG SERIES

SWITCH GUARDS

TOP APPLICATIONS:
APPLICATIONS IN HARSH ENVIRONMENTS



DESIGNED TO PROTECT

- Variety of locking options
- Hydrocarbon/acid/chemical resistant (MSG)
- Easy marking on top (MSG)
- Complements APEM's toggle range
- Anti-tamper wire seal hole as standard

SERIES	CAP MATERIAL	SUPPORT PLATE	OPERATING TEMPERATURE	MECHANICAL LIFE	SWITCHES	LEVER LENGTH
MSG	Thermoset	Black stainless steel	-40°C to +85°C	20,000 cycles	Ø11.9mm Ø12mm threaded bushing	17.5 mm outside bushing

Q SERIES

PANEL MOUNT LED INDICATORS

TOP APPLICATIONS:
ANY PANEL MOUNT CONFIGURATION



LARGE VARIETY OF SIZES AND COLORS

- Reverse diode protection available
- Wide variety of LED colors
- Customization available
- Optional sealing up to IP67-IP69K
- Many different panel cut-out sizes
- Custom engravings and secret until lit legends

SERIES	PANEL CUT-OUT	MAXIMUM RATINGS	BEZEL STYLES	BEZEL FINISHES	TERMINAL OPTIONS	TYPE OF ILLUMINATION	LED COLORS
Q	Ø6, 8, 10, 12, 14, 16, 19, 22, 25, 30	2VDC -220VAC	Prominent, recessed & flushed	Bright Chrome, Black, satin Grey & anodized colors	Solder lugs, Fastons, Pins, Wire	Fixed light, bi-color, RGB, night vision	6 standard colors, 6 superbright colors, 4 hyperbright colors



HW1Z SERIES

WATERPROOF COMBINATION BUZZER AND PILOT LIGHT

TOP APPLICATIONS:
ALL ELEVATING PLATFORMS



SEALED ILLUMINATED BUZZER

- Push-in Terminals

SERIES	APPROVALS	RATED CURRENT	OPERATING VOLTAGE	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING	ILLUMINATION
HW1Z	UL, CSA, TUV and CCC	18mA (24V DC) 8mA (12V DC)	12 to 24 V DC	22.3 mm	Push-in Terminals	Through hole	Panel front: IP65 (IEC 60529) Terminal: IP40 (IEC 60529), IP54 (with terminal rubber boot) (IEC 60529)	Red Yellow

LH1D SERIES

SURFACE MOUNT INDICATORS

TOP APPLICATIONS:
ANY SURFACE MOUNT CONFIGURATION



DIRECTLY MOUNTABLE ON EQUIPMENT AND ALUMINUM FRAMES

- Single Color, Two-Color, & Three-Color Alternate
- Vibration Resistance
- Excellent Visibility
- Shock Resistance
- Direct Surface Mounting

SERIES	APPROVALS	RATED CURRENT	OPERATING VOLTAGE	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING	ILLUMINATION
LH1D	CE, TuV and UL	17 mA	24 V AC/DC	N/A	N/A	Surface mount	IP67	Single Color, Two-Color Alternate, Three- Color Alternate

HR SERIES

PROPORTIONAL THUMBWHEEL

TOP APPLICATIONS:

REMOTE CONTROLS, CRANES, SCISSOR LIFTS, BOOM LIFTS



UNIQUE THUMB CONTROL MECHANISM

- Backlighting & detent options available (up to 11)
- Self centering spring return mechanism
- Non-contacting Hall effect technology
- Choice of 4 actuator styles

SERIES	MECHANICAL LIFECYCLES	AXIS	TECHNOLOGY	OUTPUT OPTION	MOUNTING OPTIONS	SEALING
HR	5 million	1	Hall effect	Single, Dual, Analog	Rear mounting	IP68

CW SERIES

PROPORTIONAL THUMBWHEEL

TOP APPLICATIONS:
REMOTE CONTROLS, CRANES, SCISSOR LIFTS, BOOM LIFTS



MINIATURE ROLLER

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

SERIES	MECHANICAL LIFECYCLES	AXIS	TECHNOLOGY	OUTPUT OPTION	MOUNTING OPTIONS	SEALING
CW	3 million	Single	Hall effect	Single, Dual, Analog, PWM	Snap-in	Sealed electronics

XS SERIES

LOW PROFILE FINGERTIP JOYSTICK

TOP APPLICATIONS:
CABIN AUXILIARY EQUIPMENT OR BELLY BOXES



EASY NAVIGATION IN SMALL SPACES

- One or two axis
- Metal mechanism
- Analog or PWM outputs
- Low profile, less than 45mm above panel
- IP66 front panel sealing

SERIES	MECHANICAL LIFECYCLES	AXIS	TECHNOLOGY	OUTPUT OPTION	MOUNTING OPTIONS	SEALING
XS	10 million	1,2	Hall effect	Analog, PWM	Drop-in	IP66

TS SERIES

PROPORTIONAL HALL EFFECT THUMBSTICK

TOP APPLICATIONS:
REMOTE CONTROLS, CRANES, SCISSOR LIFTS, BOOM LIFTS



PRECISION FINGERTIP CONTROL

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

SERIES	MECHANICAL LIFECYCLES	AXIS	TECHNOLOGY	OUTPUT OPTION	MOUNTING OPTIONS	SEALING
TS	1 million	1, 2	Hall effect	Single, Dual, Analog	Drop-in or rear mounting	IP67, IP69K

PC SERIES

HANDHELD PENDANT CONTROLLER

TOP APPLICATIONS:

SCISSOR LIFTS, REMOTE CONTROLS, BOOM LIFTS, TRUCK TAIL LIFTS



PROPORTIONAL ERGONOMIC HANDHELD DEVICE

- Analog and USB output options
- Lightweight one-handed operation
- Configured to order
- Standard configuration with APEM TS Thumbstick and IP series pushbutton

SERIES	MECHANICAL LIFECYCLES	AXIS	TECHNOLOGY	OUTPUT OPTION	MOUNTING OPTIONS	SEALING
PC	1 million	1, 2	Hall effect	Analog, USB		Up to IP65

BD/BF SERIES

HALL EFFECT JOYSTICK PADDLES

TOP APPLICATIONS:
WIRELESS REMOTE CONTROLS, CRANES, TELEHANDLERS



LOW POWER CONSUMPTION CUSTOMIZABLE SINGLE AXIS PADDLES

- Analog and switching functions
- Low profile actuator available (BD)
- Several color insert options
- Minimal below panel depth with stackable mounting

SERIES	MECHANICAL LIFECYCLES	AXIS	TECHNOLOGY	SWITCHING POINTS (DEGREES)	MOUNTING OPTIONS	SEALING
BD / BF	5 million	1	Hall effect, Switching	NONE ± 5 ± 12.5 ± 25	Drop-in	IP67

1000 SERIES

COMPACT SWITCH JOYSTICKS

TOP APPLICATIONS:
TRUCK TAIL LIFTS, PALLET JACKS, LIFT ACCESSORIES



COST EFFECTIVE HIGH CURRENT SWITCHING

- Configurable with single or double pole switching
- Versatile, compact and cost-effective
- Large selection of robust, ergonomic handles

SERIES	MECHANICAL LIFECYCLES	AXIS	TECHNOLOGY	OUTPUT OPTION	MOUNTING OPTIONS	SEALING
1000	5 million	1, 2	Switching (1, 2 poles)	Single	22mm bushing, 4 point screw	Up to IP67

3000 SERIES

PREMIUM HALL EFFECT JOYSTICK

TOP APPLICATIONS:
WIRELESS REMOTE CONTROLS, PALLET JACKS, BUCKET TRUCKS



COMPACT, PRECISION HALL EFFECT JOYSTICK

- Precision contactless Hall effect technology
- Compact for low profile applications
- Robust with over 10 million mechanical lifecycles

SERIES	MECHANICAL LIFECYCLES	AXIS	TECHNOLOGY	OUTPUT OPTION	MOUNTING OPTIONS	SEALING
3000	10 million	1, 2, 3	Hall effect	USB, Analog	Drop-in or rear mounting	IP67

HF SERIES

MULTI-AXIS HALL EFFECT JOYSTICKS

TOP APPLICATIONS:
WIRELESS REMOTE CONTROLS, PALLET JACKS, BUCKET TRUCKS



ENVIRONMENTALLY SEALED, FINGER OPERATED

- 1, 2 & 3 axis configurations
- CAN bus J1939 and CANopen options
- USB 2.0 HID interface option
- Dual sensors for redundancy
- Voltage regulator, 24V supply option
- Connectorized housing

SERIES	MECHANICAL LIFECYCLES	AXIS	TECHNOLOGY	OUTPUT OPTION	MOUNTING OPTIONS	SEALING
HF	5 million	1, 2, 3	Hall effect	USB, Analog	Drop-in or rear mounting	IP67

XF SERIES

REINFORCED MULTI-AXIS HALL EFFECT JOYSTICKS

TOP APPLICATIONS:
WIRELESS REMOTE CONTROLS, PALLET JACKS, BUCKET TRUCKS



AVAILABLE WITH CAN BUS

- 5M cycles
- Available with 1, 2 or 3 axis
- SIL2 / PId capable
- Many outputs available, including CAN bus J1939
- Very compact
- Up to IP67 above panel sealing

SERIES	MECHANICAL LIFECYCLES	AXIS	TECHNOLOGY	OUTPUT OPTION	MOUNTING OPTIONS	SEALING
XF	5 million	1, 2, 3	Hall effect	Single, Dual, Analog, USB, CAN bus	Drop-in or rear mounting	IP67

CJ SERIES

MULTIFUNCTION JOYSTICK

TOP APPLICATIONS:
CRANES, TELEHANDLERS, SCISSOR LIFTS, BOOM LIFTS



AVAILABLE WITH ANALOG OUTPUT

- Configurable upper & lower faceplates
- Optional operator presence paddle switch, reducing the risk of inadvertent actuation
- Easy mounting with standard cut-out and hole pattern

SERIES	MECHANICAL LIFECYCLES	AXIS	TECHNOLOGY	OUTPUT OPTION	OPERATOR DEADMAN LEVER	SEALING
CJ	5 million	1, 2	Hall effect	Single, Dual, Analog, USB, CAN bus	X	Up to IP67

XD SERIES + RT HANDLE

HALL EFFECT ROBUST JOYSTICK

TOP APPLICATIONS:
ALL MATERIAL HANDLING



DESIGNED FOR DEMANDING APPLICATIONS

- 10 million lifecycles
- Available with CAN bus J1939-71
- IP67 above panel sealing
- SIL2 / Pld capable
- Extreme robustness
- Shallow mounting depth
- Up to 1780 N - 400 lbf horizontal load (depending on handle)
- Faceplate and backplate fully configurable

SERIES	MECHANICAL LIFECYCLES	AXIS	TECHNOLOGY	OUTPUT OPTION	MOUNTING OPTIONS	SEALING
XD	10 million	1 to 2 axis	Hall effect	Single, Dual, CAN bus	Drop-in	IP67

MS SERIES

MID-SIZE HALL EFFECT JOYSTICKS

TOP APPLICATIONS:
ELEVATING PLATFORMS AND TELESCOPIC BOOM LIFTS, SCISSOR LIFTS



ERGONOMIC PALM GRIP CONTROLLERS

- Compact size
- 1, 2 and 3 axis configurations
- Available with CAN bus J1939
- Available with USB 2.0
- HID compliant interface
- Redundant outputs available

SERIES	MECHANICAL LIFECYCLES	AXIS	TECHNOLOGY	OUTPUT OPTION	MOUNTING OPTIONS	SEALING
MS	10 million	1, 2, 3	Hall effect	USB, Analog, CAN bus	Drop-in or rear mounting	IP67

KP6 CAN BUS KEYBOARD

RUBBER KEYPAD

TOP APPLICATIONS:
BUCKET TRUCKS, SCISSOR LIFTS, BOOM LIFTS



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	SEALING	OPERATING VOLTAGE	COMMUNICATION PROTOCOL	MOUNTING	EXTRA FEATURES
KP6 CAN BUS KEYBOARD	up to IP67	12 to 24 VDC	Can J1939 or discrete	Snap-in front mounting	Special illumination/phantom marking / special key colors

REMOTE CONTROL

PANEL SOLUTIONS

TOP APPLICATIONS:
ALL MATERIAL HANDLING MACHINERY



ON DEMAND ELECTRONICS & SOFTWARE INTEGRATION

- Plug and play product
- Backlighting
- IP67/IP69K sealing
- Up to SIL2/PLd capable

CUSTOMIZATION OPTIONS

Based on 9 mastered technologies (membrane, elastomeric...) and high performance APEM components

Design for outdoor and dusty environment

APEM Available Communication Protocols as a standard : CAN bus, RS485/422, USB

Consideration of ergonomic constraints in the design for user-friendly operation

Developed to withstand falls

COMPLETE DASHBOARD

PANEL SOLUTIONS

TOP APPLICATIONS:
ALL MATERIAL HANDLING MACHINERY



ON DEMAND ELECTRONICS & SOFTWARE INTEGRATION

- Rear or front panel mounting
- Backlighting
- IP67/IP69K sealing
- Up to SIL2/PLd capable

CUSTOMIZATION OPTIONS

Based on 9 mastered technologies (membrane, elastomeric...) and high performance APEM components

Design for outdoor and dusty environment

APEM Available Communication Protocols as a standard : CAN bus, RS485/422, USB

UV, shock & vibration resistance

"I" RANGE PUSHBUTTON SWITCHES

ULTRA SEALED:
NO SPACE BETWEEN
ACTUATOR AND
BUSHING

COMPACT
BUSHING IDEAL
FOR MATRIX
MOUNTING

IX SERIES

COMPACT BACKLIGHTED PUSHBUTTON



TACTILE EFFECT FOR SECURE ACTIVATION



LARGE CHOICE OF OPTIONS:
COLOR, MARKING, BACKLIGHTING, OUTPUT.



FLEXIBLE ELASTOMER MEMBRANE ACTUATOR

If you have a specific requirement, an APEM team professional is happy to assist you in the development of a complete turnkey solution with responsiveness and flexibility.



APEM

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AT A GLANCE



70 YEARS OF TRUST BUILT ON QUALITY



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50,000 + PART NUMBERS

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