



# MATERIAL HANDLING VEHICLES & RADIO REMOTE CONTROLS

# APEM IN IN MATERIAL HANDLING

The complexity of logistics equipment keeps increasing 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 to 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 today one of the latest range of Human-Machine Interfaces, including pushbutton, 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



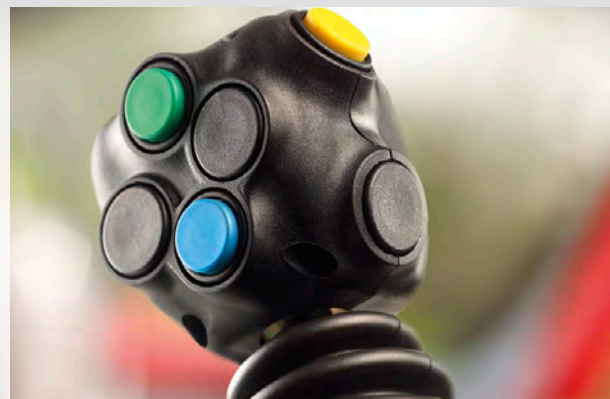
PANEL SOLUTIONS



### 2 CUSTOMIZED PRODUCTS

APEM engineers will propose you the best ergonomics, shape, marking, backlighting, material, waterproofing, 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.

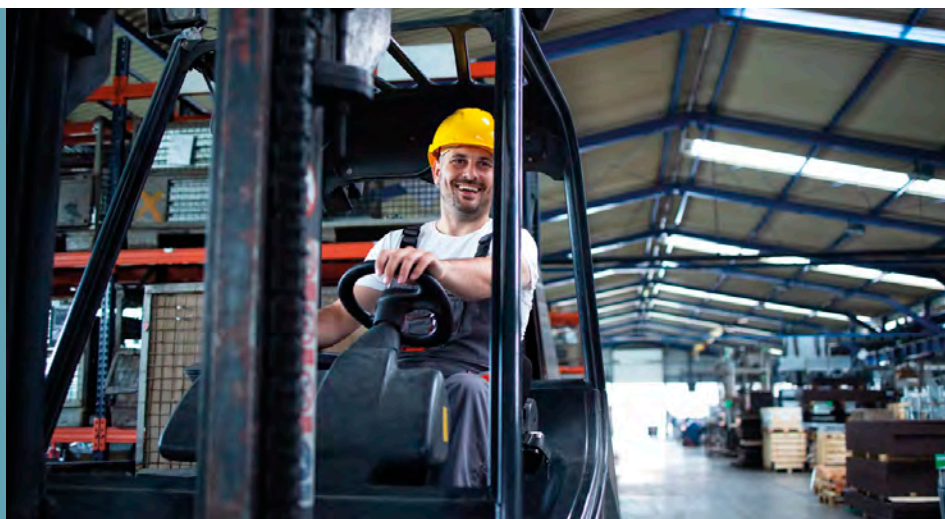


### 3 CAPABILITY TO BUILD PANEL SOLUTIONS



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

# YOU HAVE SPECIFIC NEEDS, WE HAVE DEDICATED SOLUTIONS



## ROBUSTNESS

is essential to build trust with the machine.

### 12 000 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 robustness.



## LARGE CHOICE

to cover all material handling applications.

### I RANGE

We want to make sure you build exactly what you have in mind. That is why, our I range offers many customization options, such as: actuators shape, sealed, hall effect, color, etc.

## PRODUCTIVITY

driven by innovation.

### JOYSTICK

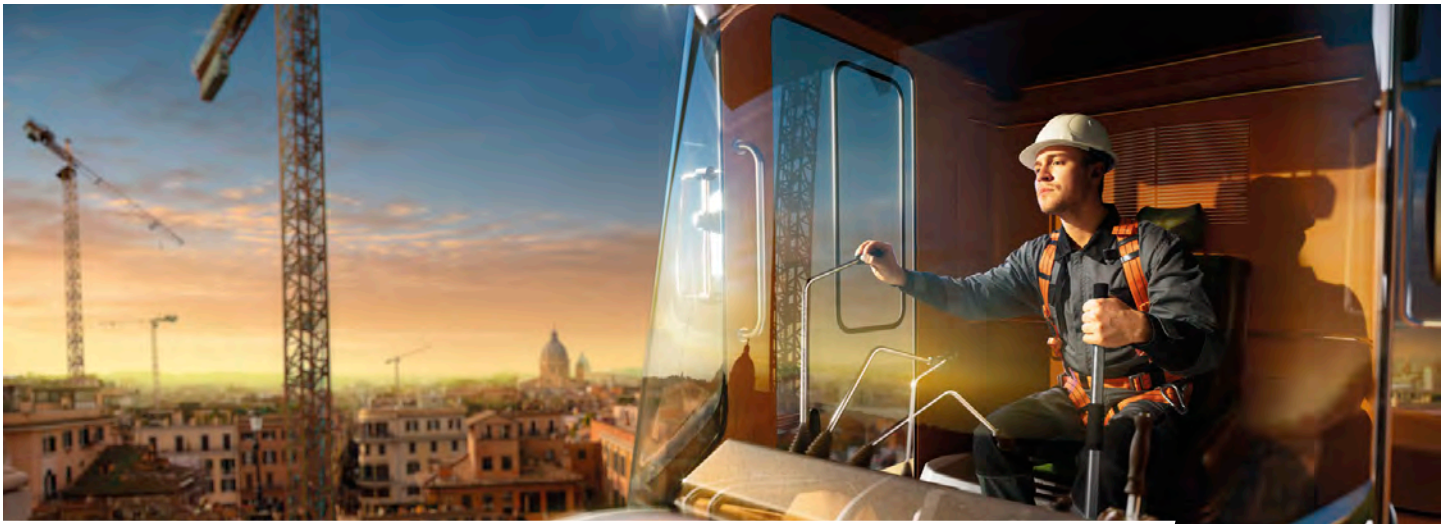
Discover how our range of joysticks helps material handling professionals precisely and easily control a growing number of machine functions.




**CUSTOMIZATION**  
For unique HMI  
experience.








### KEYBOARDS


We understand that user experience is key in material handling applications. Build your own exclusive and user-friendly keypads to provide unique machine experience based on your budget and vision.








# HOW OUR PRODUCTS ARE USED






	<p><b>EC SERIES</b> Emergency range switch</p>		<p><b>FP SERIES</b> Illuminated pushbutton</p>	<p><b>XD RT HANDLE</b> Ergonomic grip offering a wide selection of functions</p>
	<p><b>AV SERIES</b> Anti-vandal pushbutton</p>		<p><b>CUSTOM AND OFF THE SHELF KEYPADS</b> Integrated into dashboard applications</p>	
	<p><b>IB SERIES</b> Sealed pushbutton switches with snap-in mount</p>		<p><b>3000 SERIES</b> High-precision contactless joystick</p>	



	<p><b>CT SERIES</b> Toggle switch</p>		<p><b>IA SERIES</b> Pushbutton with membrane</p>	<p><b>CUSTOM KEYBOARD</b></p>
	<p><b>Q SERIES</b> Daylight visible LED indicators</p>		<p><b>MSG SERIES</b> Switch guards</p>	



	<p><b>12000 SERIES</b> Toggle switches</p>		<p><b>SEALING BOOTS</b> Toggle &amp; pushbutton boots</p>
	<p><b>BD/BF ou BH/BL SERIES</b> Hall effect joystick and switch function</p>		<p><b>TS SERIES</b> Thumbstick proportional two axis joystick in a miniature package</p>

# PANEL SOLUTIONS

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

By combining all know-how acquired on material handling market and its environment during the last decades, APEM provides the most suitable solution to its customers.

TECHNOLOGIES MASTERISED BY APEM AND ADAPTED TO MATERIAL HANDLING EQUIPMENT:

Membrane

Elastomeric\*

MEC PCB switch panel\*

Membrane on PCB\*

Metal\*



\*CANBus Output available

## ELECTRONIC & 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 but also develops some custom PLx (AgPLx, MPLx, ...), SILx solutions as per customer requests.

# CUSTOMER EXCLUSIVE

CUSTOM PRODUCTS  
CO-DEVELOPED WITH CUSTOMERS



APEM  
EXCLUSIVE

ROBUST JOYSTICK TO HANDLE FALLS

EASY TO PICK UP

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 CUSTOMISED SOLUTION, LET APEM PUTS ITS DECADES OF MATERIAL HANDLING EXPERIENCE TO WORK FOR YOU.

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
METAL PUSHBUTTON






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# 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 levers 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 (15/32)	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	Ø 16 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 MOUNTING 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 (.472)	Ø 16 mm (.629 in)	Ø 16 mm (.629 in)	Ø 16 mm (.629 in)	Ø12 (.472)	Ø12 (.472)	Ø12 (.472)	Ø12 mm (.472 in)	Ø 16 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 (.944), Ø26 (1.024), Ø30 (1.18) 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	Ø 30 mm (1.18 in)	Solder lugs, quick-connect, PCB, Flying load, 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)
- Sealed up to IP69K
- Threaded or snap-in versions

SERIES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING	ILLUMINATION
FD	1, 2	4A 12VDC 200mA 12VDC	Ø24 (.944) Ø26 (1.024)	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
- Anodized actuator, available in multiple colors
- Quick break contacts
- 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
- Illumination with marking
- 1 NO/NC in each direction
- SIL2 / PLd capable

SERIES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING	ILLUMINATION
FNR	1 NO/NC	1A 24V	Ø 20 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

# IDEC 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.

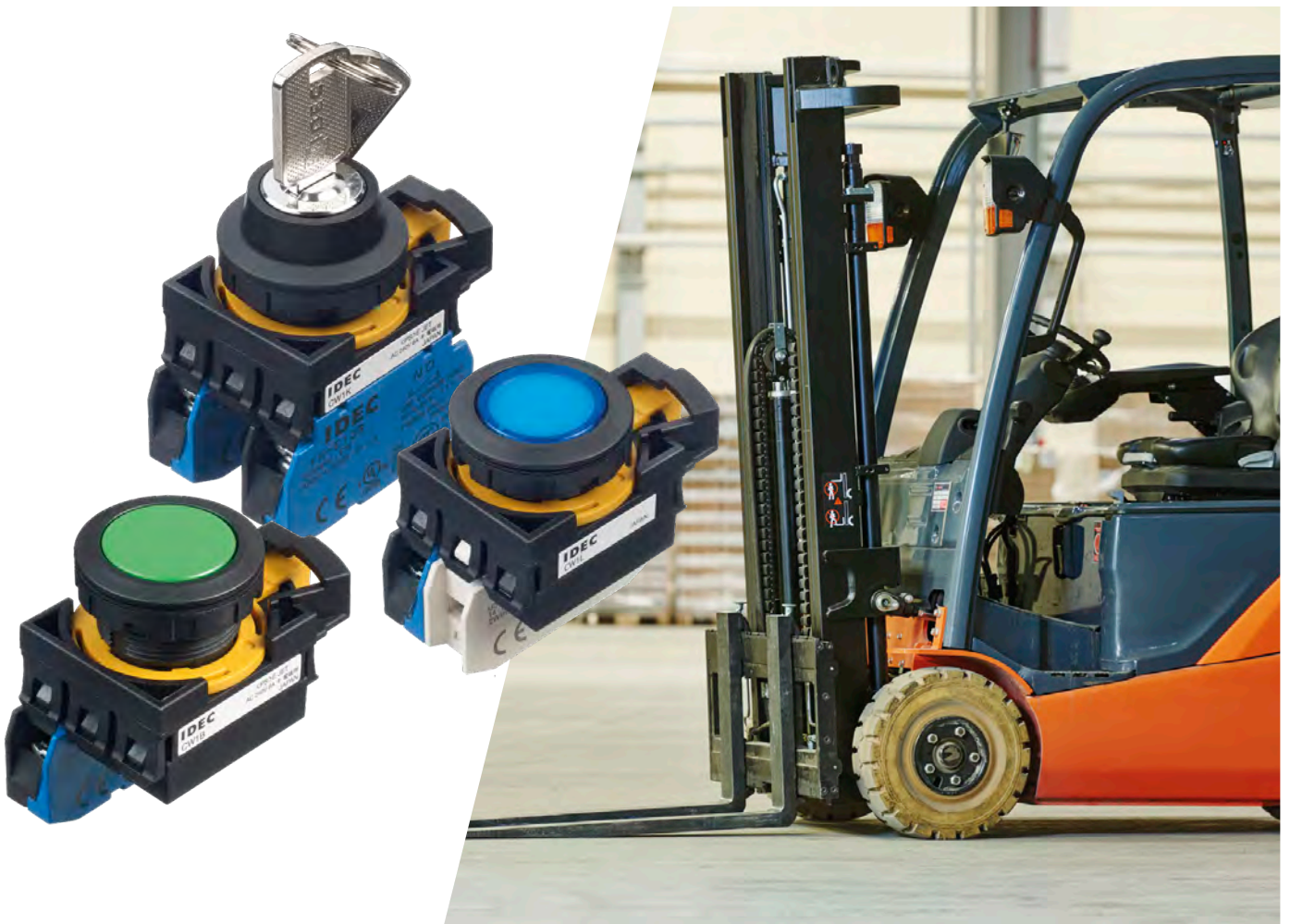
SERIES	APPROVALS	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING	ILLUMINATION
MW	CE, CCC	Up to 3	Heavy duty (up to 10 Amps)	Ø22mm (.866in)	Solder/tab or screw	Panel	IP65, IP66	



# 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	20A 12VDC	Ø22mm	Screw or Push-in	Panel	IP65	X
CW Keylock/ selector	250,000	UL, CE, CCC	Up to 6	10A 24VDC	Ø22mm	Screw or Push-in	Panel	IP65, IP67	

# 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	Ø22mm (.866in)	Solder lugs, quick-connect	Panel	IP65



# XW SERIES

## EMERGENCY STOP SWITCHES

TOP APPLICATIONS:  
ALL MATERIAL HANDLING VEHICLES



### ”SAFE BREAK ACTION” TECHNOLOGY

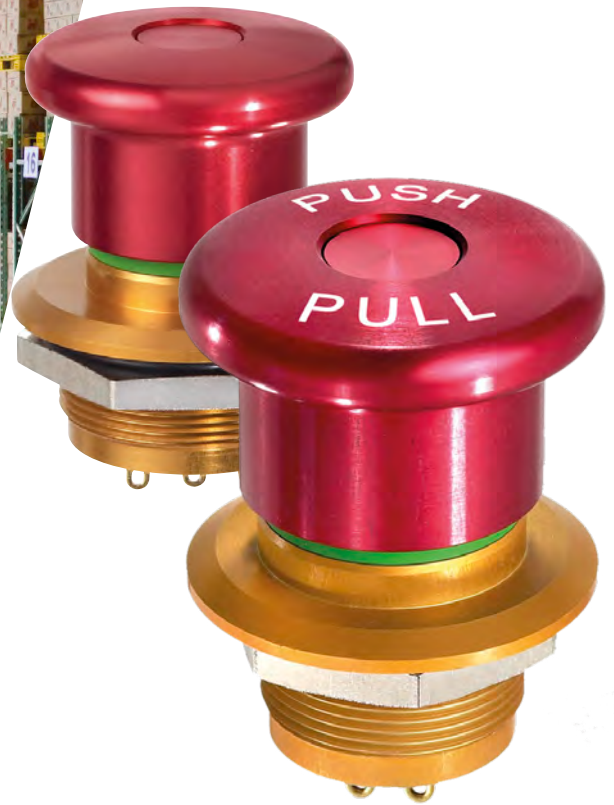
- Space-saving design
- Three operator sizes: ø38, ø40 and ø60 mm
- Exclusive safety technology ensuring that the machinery is stopped if actuator is broken
- Sealed up to IP67
- Available with illumination
- Twist or pull to release

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	Ø22mm (.866in)	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, Ø28(.877)	Solder lugs, straight PC	Panel	IP65/IP67/IP69K	X



# LB SERIES

## FLUSH SILHOUETTE SWITCHES

TOP APPLICATIONS:  
FORKLIFTS



## ERGONOMIC & COMPACT SWITCHES

- Illuminated/non-illuminated Selector
- 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)	Ø16mm (.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	22.3mm	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 ALUMINIUM FRAMES

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

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
- Many outputs available, including CAN bus J1939
- Available with 1, 2 or 3 axis
- Very compact
- SIL2 / Pld capable
- 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, CANbus	X	Up to IP67

# XD SERIES + RT HANDLE

HALL EFFECT ROBUST JOYSTICK

TOP APPLICATIONS:  
ALL MATERIAL HANDLING



## DESIGNED FOR DEMANDING APPLICATIONS

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

- CANbus 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



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**USA**  
970 Park Center Drive  
VISTA, CA 92081  
Tel: (+1) 760 598 2518  
info@apem.com

**USA**  
63 Neck Road  
HAVERHILL, MA 01835  
Tel: (+1) 978 372 1602  
info@apem.com

**CHINA**  
IDEC Shanghai  
8th Floor, Tower 2,  
Enterprise Centre,  
No.209 Gong He Road,  
Shanghai, 200040, P.R.C  
Tel: +86 21 6076 1355  
apem@apem.com.cn

**JAPAN**  
IDEC Corporation  
2-6-64 Nishimiyahara,  
Yodogawa-ku, Osaka,  
Japan 532-0004  
apem-sales@jp.idec.com

**SINGAPORE**  
IDEC Izumi Asia Pte Ltd  
31 Tannery Lane  
Singapore 347788  
Tel: +65 6746 1155  
apem.apec@idec.com

**BENELUX**  
Belgicastraat 7/1  
1930 ZAVENTEM  
Belgium  
Tel B: (+32) 27 25 05 00  
Tel NL: (+31) (70) 799 91 51  
be.sales@apem.com

**FRANCE**  
55, avenue Edouard Herriot  
BP1  
82303 CAUSSADE Cedex  
Tel: (+33) 5 63 93 14 98  
fr.commercial@apem.com

**GERMANY**  
Gewerbehof Giesing  
Paulsdorferstr. 34, 2. OG  
D-81549 MUNICH  
Tel: (+49) 89 45 99 11 0  
de.info@apem.com

**ITALY**  
Via Marconi 147G  
12030 MARENE (CN)  
Tel: (+39) 0172 74 31 70  
apem.italia@apem.com

**SWEDEN**  
Torshamnsgatan 39  
S-16440 KISTA  
Tel: (+46) 8 626 38 00  
se.info@apem.com

**UNITED KINGDOM**  
Drakes Drive  
LONG CRENDON,  
Bucks HP18 9BA  
England  
Tel: (+44) 1 844 202400  
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