



# PRODUCT GUIDE



## A LEADING WORLDWIDE MANUFACTURER OF HUMAN-MACHINE INTERFACE PRODUCTS AND SOLUTIONS SINCE 1952

### APEM EXPERTISE

APEM DEVELOPS,  
PRODUCES AND SELLS  
A WIDE RANGE OF HUMAN  
MACHINE INTERFACE (HMI)  
PRODUCTS.  
HMI PRODUCTS CONSIST  
OF A DIVERSE VARIETY  
OF SWITCH PRODUCTS.

Since its creation in 1952, APEM has chosen to vertically integrate all phases of production. The raw materials needed in manufacturing panel or PCB switches and indicators, such as plastic pellets or aluminum coils, are all processed in our production facilities.

Based on the industrial and technological experience acquired during its 70 years' existence, APEM controls all phases of product development and manufacturing. This industrial expertise ensures the continuity of our product ranges over time and is a guarantee for sustainable partnerships with our customers.

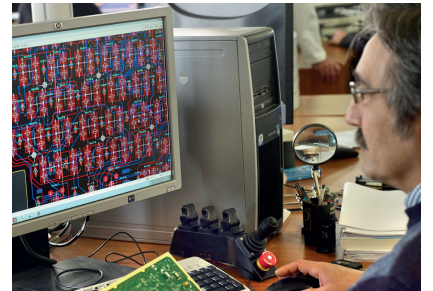
APEM is committed to mastering new tools and current technologies in order to offer its clients up-to-date solutions that are always at the cutting edge of innovation.



## TECHNICAL AND INDUSTRIAL EXCELLENCE

**APEM controls all phases of product development and manufacturing with vertically integrated production and advanced technologies.**

APEM's dedication and experience facilitates a quick and effective response to the most complex requirements. This technical expertise ensures the continuity of APEM's vast portfolio of products and the strength of our valued partnerships.



## YOUR EXPERT PARTNER

**APEM's expansive product range is comprised of more than 50,000 part numbers. Colors, markings, finishes, shapes and dimensions offer an unlimited number of options, creating complete custom solutions for unique customer requirements.**

For over 65 years, top manufacturers worldwide have placed their trust in APEM to develop and manufacture reliable high performance HMI components & solutions for their most demanding applications. APEM continues to meet and exceed these demands with innovation, quality and service.



# SWITCHING TECHNOLOGIES, OUR CORE BUSINESS

ORGANIZED IN 3 BUSINESSES, APEM'S HMI SOLUTIONS ARE DESIGNED, FULLY TESTED AND QUALIFIED FOR DEMANDING APPLICATIONS. THEY GUARANTEE THE HIGHEST LEVEL OF ROBUSTNESS AND RELIABILITY TO MEET INTERNATIONAL STANDARDS.

## COMPONENTS

Toggle, pushbutton, rocker, slide, tact and rotary switches, industrial controls, LED indicators, for panel or PCB: APEM offers the broadest range in these switch markets.



## JOYSTICKS

Easy to operate and highly reliable, APEM joysticks are suitable for all size and shape requirements from thumb and finger operation to full hand grip products.



## PANEL SOLUTIONS

Relying on APEM's already qualified product ranges and mastery of the main panel technologies, the teams are able to design complete and fully customized HMI solutions for customers.



## Reliable products for demanding environments

In the market segments served by APEM, HMI solutions can be safety critical and/or subject to harsh conditions (extreme temperatures, vibrations, shocks, high pressure washing, corrosive substances...).

In these environments, the RELIABILITY of hardware, electronics and software is critical to guarantee the SAFETY of the operator or user. APEM offers robust HMI components fully tested and qualified for these demanding applications to guarantee the highest level of robustness, and reliability in line with national and international standards.



### DEFENSE

Delivering robust and field proven HMI products, guaranteeing 100% reliability and military standard requirements in the Defense industry for more than 60 years.

### MATERIAL HANDLING

Robust and reliable HMI components are key to guaranteeing operator safety. From design to quality, APEM focuses on strength and safety to meet and exceed customers' expectations.

### CONSTRUCTION

APEM products for heavy duty vehicles have been designed, qualified and fully tested for these demanding conditions to guarantee the highest level of robustness, reliability and ergonomics.



# TOGGLE SWITCHES

12000 SERIES - ROBUST SWITCHES FOR HIGH SPECIFICATION ENVIRONMENTS



CONFORMS TO MIL & CECC SPECIFICATIONS



PROVEN RELIABILITY IN THE HARSHTEST ENVIRONMENTS



NUMEROUS RATING, SEALING, LEVER FINISH OPTIONS AND SEALING BOOTS



HIGH PERFORMANCE VERSION



**PINNED LEVER AS STANDARD**  
Preventing internal damage to the contact arm and mechanism



SERIES	ZL	S & SF	5000	5000M	55000	21000N
Approvals		UL - CECC	VDE - UL - CSA CECC	UL - CSA	VDE - UL - CSA	CECC
Poles	1	1,2	1,2,3,4	1,2,3,4	2	1,2
Maximum ratings	500 mA 48 VDC	(2 A 250 VAC)* 4 A 30 VDC	(3 A 250 VAC)* 4 A 30 VDC	(3 A 250 VAC)* 4 A 30 VDC	3 A 250 VDC	4 A 30 VDC
<b>Bushing dimensions</b>						
Ø6 (.236)			X		X	
Ø6,35 (1/4)		X	X		X	X
Ø4,83 (.190)	X					
Ø11,9 (15/32)			X	X		
<b>Mounting options</b>						
Vertical - Through-hole	X	X	X		X	
Horizontal - Through-hole		X	X		X	X
Vert. right angle - Through-hole		X	X			
Panel	X	X	X	X	X	X
<b>Terminal options</b>						
PCB	X	X	X	X	X	X
Solder lugs	X	X	X		X	
Quick-connect			X		X	
Wire wrap			X			
Sealing	No	Process	Optional	Optional	No	Optional

## OUR RANGE

For more information, see APEM website



SERIES	10600	11000	12000	12000X778	1000
Approvals	CECC	CECC	CECC	CECC - MIL	
Poles	1,2	1,2,3,4	2,3,4	2,3,4	1
Maximum ratings	3 A 24 VDC	4 A 30 VDC	4 A 30 VDC	4 A 30 VDC	6 A 30 VDC
<b>Bushing dimensions</b>					
Ø6,35 (1/4)		X			
Ø10 (.393)	X				
Ø11,9 (15/32)			X	X	
Ø12 (.472)					X
<b>Mounting options</b>					
Vertical - Through-hole		X	X	X	
Horizontal - Through-hole		X			
Vert. right angle - Through-hole					
Panel	X	X	X	X	X
<b>Terminal options</b>					
PCB		X	X	X	
Solder lugs	X	X	X	X	X
Quick-connect					X
Screw					X
Sealing	No	Optional	Optional	IP67	No



SERIES	4600-4400	600H-600NH	660	3500	3600NF	6000
Approvals	VDE - UL - CSA	NF - VDE - UL - CSA		CECC	UL	
Poles	1,2,3	1,2,3	4	1,2	1,2	1,2,3,4
Maximum ratings	(4 A 250 VAC)*	(15 A 250 VAC)* 10 A 24 VDC	10 A 30 VDC	15 A 28 VDC	(6A 250 VAC)* 15 A 28 VDC	6,5 A 30 VDC
<b>Bushing dimensions</b>						
Ø11,9 (15/32)				X		X
Ø12 (.472)	X	X	X		X	
<b>Mounting options</b>						
Vertical - Through-hole	X					
Panel	X	X	X	X	X	X
<b>Terminal options</b>						
PCB	X					
Solder lugs	X	X	X	X	X	X
Quick-connect	X	X	X	X	X	X
Screw		X	X	X	X	X
Sealing	No	Optional	Optional	IP67, IP69K	IP67	Optional

\* See applicable approvals

The most common configurations are presented in this catalog. Other commercially available configurations already existing in our different ranges of products, non-standard and custom products are available upon request.

# “I” RANGE PUSHBUTTON SWITCHES

## IX SERIES - COMPACT BACKLIGHTED PUSHBUTTON



TACTILE EFFECT  
FOR SECURE ACTIVATION



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



FLEXIBLE ELASTOMER  
MEMBRANE ACTUATOR

APEM  
INNOVATION

ULTRA SEALED:  
NO SPACE BETWEEN  
ACTUATOR AND  
BUSHING

COMPACT  
BUSHING IDEAL  
FOR MATRIX  
MOUNTING



## OUR RANGE

For more information, see APEM website



SERIES	IX	IC	IL	IM	IP momentary	IP latching	IB	IS	IHS Hall effect
Approvals				UL	UL	UL	UL	UL	
Poles	1	1	1	1	1	1	1	1	1 NPN
Maximum ratings	2 A 28 VDC	5 A 28 VDC	2 A 24 VDC	(2 A 250 VAC)* 3 A 28 VDC	(2 A 250 VAC)* 5 A 28 VDC	(2 A 250 VAC)* 4 A 12 VDC	(2 A 250 VAC)* 100 mA 48 VDC	(2 A 250 VAC)* 100 mA 48 VDC	50 mA 24 VDC
Illuminated	X		X		X	X			
Bushing dimensions									
Ø12 (.472)	X	X	X	X	X	X	X	X	X
Mounting options									
Threaded	X	X	X	X	X	X		X	X
Snap-in							X		
Terminal options									
PCB		X	X	X	X	X	X	X	
Solder lugs	X	X	X		X	X	X	X	
Quick-connect		X		X	X	X	X	X	
Flying leads	X	X	X		X	X			X
Sealing	IP67/IP69K	IP67	IP67	IP67	IP67	IP67	IP54	IP67	IP67



SERIES	IHL Hall effect	IQ momentary	IQ latching	IZ metal	IZ plastic	IR microswitch	IR standard	IR latching	IA
Approvals									
Poles	1	1	1	1	1	1	1	1	1
Maximum ratings	1,25 mA 4,5 VDC	5 A 28 VDC	4 A 12 VDC	4 A 48 VDC	4 A 48 VDC	5 A 250 VAC	5 A 28 VDC	4 A 12 VDC	2 A 24 VDC
Illuminated		X	X	X	X	X	X	X	
Bushing dimensions									
Ø16 (.629)	X	X	X	X	X	X	X	X	X
Mounting options									
Threaded	X			Rear	Rear	X	X	X	X
Snap-in		X	X						
Terminal options									
PCB		X	X	X	X		X	X	
Solder lugs		X	X	X	X		X	X	
Quick-connect		X	X	X	X	X	X	X	
Screw		X		X	X		X		
Flying leads	X	X	X	X	X		X	X	X
Sealing	IP67	IP54	IP54	IP67	IP67	IP67	IP67	IP67	IP67

\* See applicable approvals

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# PUSHBUTTON SWITCHES

APEM DESIGN

MILITARY GRADE CECC 96401-0001 APPROVAL

13000X778 SERIES - HIGH RELIABILITY AND PERFORMANCE



FULLY SEALED UP TO IP68



HIGHLY RELIABLE CONTACTS



SERIES	CG	CP	PBA	FP	FD	MP	LPI	PR & V
Approvals			Atex					
Poles	1 NPN	1 NPN	1	1,2	1,2	1,2	1	
Maximum ratings	200 mA 24 VDC	200 mA 24 VDC	1 A 24 VDC	4 A 12 VDC	4 A 12 VDC	20 mA 5 VDC	5 A 12 VDC 100mA 12 VDC	50 m 24 VDC
Illuminated	X	X	X	X	X		X	X
Bushing dimensions								
Ø14								X
Ø15,20 (.598)						X		
Ø16 (.629)		X	X					
Ø19 (.748)		X	X					
Ø22 (.866)		X	X					
Ø24 (.944)				X	X			
Ø26 (1.023)				X	X			
Ø30 (1.18)			X	X				
Ø38 (1.496)							X	
Ø44 (1.732)							X	
Mounting options								
Panel	X	X	X	X	X	X	X	X
Snap-in					X			
Terminal options								
Solder lugs				X	X			
Screw							X	
Flying leads		X	X					
Cable		X	X	X				
Connector	X	X				X		X
Sealing	N/A	IP68, IP69K	IP68, IP69K	IP69K (except Ø30)	IP69K	IP68	IP53	IP65

## OUR RANGE

For more information, see APEM website



SERIES	WP	ZP	9100-9200-9500	SP	8000	9400-9600	10400
<b>Approvals</b>				UL	UL		CECC
<b>Poles</b>	1, 2	1	1	1, 2	1, 2	1	1, 2
<b>Maximum ratings</b>	4 A 30 VDC	500 mA 48 VDC	100 mA 30 VDC	(1 A 120 VAC)* 1 A 30 VDC	(3 A 250 VAC)* 4 A 30 VDC	1 A 30 VDC	3 A 24 VDC
<b>Bushing dimensions</b>							
Ø4 (.157)			X				
Ø4,83 (10-48)		X					
Ø6,35 (1/4)				X	X	X	
Ø10 (.393)							X
Ø11,9 (15/32)					X		
Ø16 (.629)						X	
Ø22 (.866)	X						
<b>Mounting options</b>							
Vertical - Through-hole		X	X	X	X	X	
Horizontal - Through-hole				X	X		
Vert. right angle - Through-hole			X	X			
Panel	x	X	X	X	X	X	X
<b>Terminal options</b>							
PCB	X	X	X	X	X	X	
Solder lugs	x	X	X		X	X	X
Quick-connect						X	
Flying leads	X						
<b>Sealing</b>	IP67, IP69K	No	Optional	Process	Optional	Optional	No



SERIES	13000	13000X778 momentary	13000X778 alternate	18000	1200	1400	4700-4800
<b>Approvals</b>	UL - CECC	CECC			NF - UL - CSA		VDE - UL - CSA
<b>Poles</b>	1, 2	2, 3	2	1, 2	1	1	1, 2
<b>Maximum ratings</b>	(2 A 250 VAC)* 4 A 30 VDC	4 A 28 VDC	4 A 28 VDC	7 A 30 VDC	(4 A 250 VAC)* 4 A 24 VDC	6 A 12 VDC	(3 A 250 VAC)*
<b>Bushing dimensions</b>							
Ø6,35 (1/4)	X			X			
Ø11,9 (15/32)	X	X	X				
Ø12 (.472)					X		X
<b>Mounting options</b>							
Vertical - Through-hole	X	X	X	X		X	X
Horizontal - Through-hole	X			X			
Vert. right angle - Through-hole				X			
Panel	X	X	X	X	X	X	X
Snap-in				X		X	
<b>Terminal options</b>							
PCB	X	X	X	X			
Solder lugs	X	X	X	X	X	X	X
Quick-connect					X	X	X
Screw					X		
<b>Sealing</b>	Optional	IP67	IP67	No	No	No	No

\* See applicable approvals

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# “AV” RANGE PUSHBUTTON SWITCHES

APEM  
RELIABILITY

RESISTANT to demanding environmental requirements (rain/frost/salt/UV), and to vandalism

IK & IP: TESTED & QUALIFIED PRODUCTS

## AV SERIES - WITHSTANDS ANY AGGRESSIVE USE



APPEALING AESTHETICS: MATERIALS, COLORS, CONTRAST, BRIGHT OR DIM ILLUMINATION, EMBOSSING, BRAILLE MARKING, SHAPES & DIMENSIONS...



RESISTANT MATERIALS: STAINLESS STEEL, FLAME-RETARDANT PLASTICS...

## OUR RANGE

For more information, see APEM website



MODELS	AV 16 mm momentary	AV16 latching	AV 250V latching	AV 19 mm tactile, mom.	AV 19/22 mm tactile overmolded	AV 19/22 mm anti-vandal, mom.	AV 19/22 mm momentary
<b>General specifications</b>							
Anti-vandal (IK08/IK10)						X	
Security	X	X	X	X	X		X
Approvals			NF			UL - CSA	UL - CSA
Sealing	Up to IP65	Up to IP65	Up to IP65	Up to IP65	Up to IP67, IP69K	Up to IP65	Up to IP65
Illumination				X	X		
Marking				X	X		X
<b>Electrical specifications</b>							
Maximum ratings	0,2 A 48 VDC	1 A 24 VDC	(1 A 250 VAC)*	50 mA 24 VDC	50 mA 24 VDC	2 A 48 VDC (4 A 250 VAC)*	2 A 48VDC (4 A 250 VAC)*
Momentary (NO)						X	X
Momentary (NO) tactile	X			X	X		
Latching		X	X				
<b>Diameter and shape</b>							
Ø16 (.629) Flat	AV063	AV061	AV06100				
Ø16 (.629) Curved	AV163	AV161	AV16100				
Ø19 (.748) Flat			AV09100	AV09C7	AV9S	AV09	AV09
Ø19 (.748) Curved			AV19100	AV09C7		AV19	AV19
Ø22 (.866) Flat			AV03100		AV3S	AV03	AV03
Ø22 (.866) Curved			AV02100			AV02	AV02



MODELS	AV 19/22 mm NC/NO	AV 19/22 mm latching	AV 19/22/24 mm	AV 22 mm NC	AV 22 mm alternate	AV 22 mm mushroom head	AV 30 mm NC/NO
<b>General specifications</b>							
Security	X	X	X	X	X	X	X
Approvals			NF - UL	NF	VDE - UL - CSA	NF - UL	
Sealing	Up to IP67	Up to IP65	IP65 , IP69K	Up to IP65	Up to IP65	IP65	Up to IP67
Illumination	X	X					X
Marking				X	X		X
<b>Electrical specifications</b>							
Maximum ratings	1 A 30 VDC	2 A 48 VDC	5 A 250 VAC	2 A 250 VAC	3(1,5) A 250 VAC	5 A 250 VAC	1 A 30 VDC
Momentary (NC)				X			
Momentary NC/NO	X		X			X	X
Latching		X					
Alternate					X		
<b>Diameter and shape</b>							
Ø19 (.748) Flat	AV9	AV09..EA	AV19LP				
Ø19 (.748) Curved		AV19..EA	AV19LB				
Ø22 (.866) Flat	AV3	AV03..EA	AV22LP	AV031200	AV044700		
Ø22 (.866) Curved		AV02..EA	AV22LB	AV021200		AV22PNA	
Ø24 (.944) Flat			AV24LP				
Ø24 (.944) Curved			AV24LB				
Ø24 (.944) Concave			AV24LC				
Ø30 (1.181) Flat							AV5

\* See applicable approvals

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# ROCKER SWITCHES

Discover our webpage dedicated to the FNR series: [apem-solutions.com/fnr](http://apem-solutions.com/fnr)

APEM DESIGN

EXCELLENT FRONT PANEL SEALING

SIL2 CAPABLE



**FNR SERIES** - ERGONOMICALLY DESIGNED FOR EFFORTLESS FORWARD/REVERSE CONTROL



DEDICATED GRIP INTEGRATION



CUSTOMIZABLE MARKING AND BACKLIGHTING



INTUITIVE AND CLEAR STATUS INDICATION



EXCELLENT TACTILE RESPONSE

## OUR RANGE

For more information, see APEM website



SERIES	S & SR	AS	MT	7000	FM	2600
Approvals	UL	UL - CSA		UL - CSA	UL - VDE	NF-VDE-UL-CSA
Poles	1,2	1	1	1,2	1	1,2
Maximum ratings	(2 A 250 VAC)* 4 A 30 VDC	(2 A 250 VAC)*	4 A 30 VDC	(3 A 250 VAC)* 4 A 30 VCC	(10 A 250 VAC)*	(16 A 250 VAC)*
Illuminated					X	X
<b>Mounting options</b>						
Vertical - Through-hole	X	X	X	X	X	
Horizontal - Through-hole	X			X		
Vert. right angle - Through-hole	X			X		
Snap-in	X	X		X	X	X
Rear mounting	X			X		
Panel cut-out		18,65 x 8,9	Ø17,65		19,2 x 12,9	30 x 22
<b>Terminal options</b>						
PCB	X	X	X	X	X	
Solder lugs	X	X	X	X	X	X
Quick-connect					X	X
Screw						X
Sealing	Process	No	No	No	Optional boot	Optional boot



SERIES	FNR	KR	KL	KI	KG	KH
Approvals					VDE	
Poles	1,2	1,2	1,2	-	1,2	1,2
Maximum ratings	1 A 24 VDC	10 A 24 VDC	10 A 24 VDC	24 VDC	(12 A 250 VAC)* 15 A 12 VDC	10 A 24 VDC
Illuminated	X	X	X	X	X	X
<b>Mounting options</b>						
Snap-in		X	X	X	X	X
Panel cut-out	Ø20,2	36,8 x 21,08	36,8 x 21,08	36,8 x 21,08	36,8 x 21,08	36,8 x 21,08
<b>Terminal options</b>						
Solder lugs	X	X	X	X	X	X
Flying leads	X					
Quick-connect		X	X	X	X	X
Screw		X	X		X	X
Connectors	X	X	X	X	X	X
Sealing	IP69K	IP68	IP68	IP68	IP65	IP69K

\* See applicable approvals

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# INDUSTRIAL CONTROL SWITCHES

## EC FOR PCB SERIES - PCB MOUNTED EMERGENCY STOP



UL AND CE CERTIFIED



2 POLES FOR ADDITIONAL SAFETY



LOW PANEL DEPTH FOR APPLICATIONS WHERE A COMPACT DESIGN IS REQUIRED

APEM EXCLUSIVE

COMPACT : 22 MM PANEL CUT-OUT

EXTRA LOCKING RING : KEEPS THE 2 PARTS TOGETHER TO AVOID A FLOATING MOUNT



## OUR RANGE

For more information, see APEM website



SERIES	A01ES-D	ES	EC	EC PCB
Type	Emergency stop	Emergency stop	Emergency stop	Emergency stop
Approvals	UL - VDE - DEMKO		EN 60947-5-1 & EN 60947-5-5	UI, EN 60947-5-1 & EN 60947-5-5
Poles	1,2	2,3	1, 2	2
Sealing	IP65	IP65,IP67,IP69K	IP65	IP65
Back panel sealing	IP40	No	No	No
Illuminated	No	No	No	No
Maximum ratings	1,5 A 250 VAC AC-15	1 A 24 VDC DC-14	1,5 A 250 VAC AC-15	1,5 A 250 VAC AC-15
<b>Panel cut-out</b>				
Ø16 mm	X			
Ø22 mm		X	X	X
Ø28 mm		X		
Flush mounting		No		
<b>Terminal options</b>				
Solder lugs	X	X	X	
Faston			X	
Connector			X	
Quick-connect	X			
Straight PC		X		
PCB mounting	Option	No		X



SERIES	A1	A01	A01	LK
Type	Pushbutton / Indicator	Pushbutton / Indicator	Keylock / Selector	Keylock
Approvals	UL - VDE	UL - VDE	UL - VDE	UL
Poles	1,2,3,4	1,2,3,4	1,2,3,4	1, 2
Sealing	IP65	IP65	IP65	IP65
Back panel sealing	Option	Option	Option	IP40
Illuminated	Yes	Yes	No	No
Maximum ratings	6 A 250 VAC 6 A 12 VDC	6 A 250VAC 6 A 12VDC	6 A 250 VAC 6 A 12 VDC	2 A 250 VAC 4 A 125 VAC/28 VDC
<b>Panel cut-out</b>				
Ø16 mm		X	X	
Ø19 mm				X
Ø22 mm	X	X	X	
Ø30 mm				
Flush mounting	Yes	Option	Option	
<b>Terminal options</b>				
Solder lugs	X	X	X	X
Quick-connect	X	X	X	
Straight PC				
PCB mounting	Option	Option	Option	

Discover also IDEC products for a larger choice in Industrial control and Emergency stops switches. [www.idec-emea.com](http://www.idec-emea.com)



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# TACTILE SWITCHES



Discover our webpage dedicated to the MEC switches:  
[apem-solutions.com/mec](http://apem-solutions.com/mec)

## MULTIMEC™ 5 - HIGH PERFORMANCE



**mec**



REFLOW SOLDERABLE



LARGE CHOICE OF CAPS  
AND ACCESSORIES



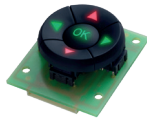
AVAILABLE IN NC/NO

MEC  
INNOVATION

10 MILLION TROUBLE-FREE ACTUATIONS

## OUR RANGE

For more information, see APEM website



SERIES	NAVIMEC	CONTROLMEC	ROCKERMEC MODULE	SINGLE SWITCH MODULE
Illumination	X	X	X	X
Marking	X	X	X	X
Size (LxH)	40x46,7 mm	40x46,7 mm	20x53 mm	22x37 mm
Height	21,7 mm	22,3 mm	23,55 mm	18/20,1 mm + cap
Front panel seling		IP67	IP67	
Other specifications	To navigate a display orcontrol a unit; five piece solution	To navigate a display orcontrol a unit; five piece solution	Flexible illumination - chip LEDs on PCB. Height below the panel: 20,4mm	4 solder pads for direct cable soldering. Suitable for large selection of caps



SERIES	ULTRAMEC™ 6C	MULTIMEC™ 5	ILLUMEC™ 4F	MULTIMEC™ 3	UNIMEC™
Dimensions	8 x 8 mm	10 x 10 mm	10 x 10 mm	10 x 10 mm	12,6 x 12,6 mm
Height	2,5 mm	6,4 / 8,5 mm	10,4 mm	6,4/10,4/12,7 mm	15,7 mm
Electrical function	Momentary NO	Momentary NO or NC/NO	Momentary NO	Momentary NO	Momentary or latching
Illumination		X	X	X	
Sealing	IP67	IP67	IP67	IP67	IP54
Lifecycles	3,000,000	up to 10,000,000	up to 10,000,000	up to 10,000,000	up to 10,000,000
Other specifications	Low profile	Large range of accessories; 3 standard actuation forces	Simple slip-on cap retention system	3F has slip-on cap retention, excellent for custom caps; 3C excellent for over-mould and under overlay	2 pole 8 contact functions

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# TACTILE SWITCHES



Discover our webpage dedicated to the MEC switches:  
[apem-solutions.com/mec](http://apem-solutions.com/mec)

## ULTRANAVIMEC - SIMPLE AND AESTHETIC NAVIGATIONAL SWITCH SOLUTION



LONG LIFE AND IP67 PANEL SEALED



DISTINCT SOUND AND CONTACT FEEDBACK



CAP COLORS AND MARKING CUSTOMISATION AVAILABLE



COMPACT : TOTAL HEIGHT 7,15 MM - ONLY 5 MM BEHIND PANEL

ILLUMINATION VIA LEDS ON THE PCB



SERIES	1A/1H/ 1M/1ZA	1B/2C/2D	1DS/1ES/ 1FS	1GAS/ 1GCS	1JS	1KS/1KBS/ 1KCS	1NS
Illumination	X	X	X	X	X	X	X
Marking		X	X				
Shape							
Round			Ø9.6 mm	Ø11/15 mm	Ø9.6 mm		
Rectangular	10.1 x 12.5/18.65/25 mm						
Square		15.1 x 15.1 mm				14.3 x 14.3 mm	
Other							Ø9.6 / 4.9 mm
Height	12.2 mm	12.2 mm	14.9 mm	12.5 mm	10.4 mm	19.1-20.2 mm	14.9 mm
Front Panel Sealing							
Other specifications	Rocker-action caps; Long travel - 2 mm	Rocker-action solution; Long travel - 2 mm	Soft edges 20 color options	Flat surface; designed for under overlay use	Designed for under overlay use	Flat, convex or concave top surface Bezel option	Tear-drop shaped; for navigating or indicating

## OUR RANGE

For more information, see APEM website



SERIES	1PS/1QS/ 1RS	1SS/1IS/ 1LS	1TS/1US/ 1VS	1WAS/1WDS/ 1WPS	1XS	1YS	1ZCS
Illumination	X	X	X	X	X	X	X
Marking							X
Shape							
Round		Ø6.5 mm	Ø10.6 mm				Ø14.3 mm
Rectangular	6.5 x 12.5 mm				7.4 x 9.4 mm		
Square			10.6 x 10.6 mm			15.1 x 15.1 mm	
Other			10.4 x 13.25 mm	6.5 x 12.5 mm 8.0 x 15.2 mm			
Height	15.7 mm	8.0 - 22.5 mm	14.9 mm	15/15.7 mm	18.5 mm	12.5 mm	11.7 mm
Front Panel Sealing			X				
Other specifications	Concave top surface	Variable heights; rounded top surface	Rounded top surface; can be used in custom keyboards	convex or concave top surface	Soft edges	Round corners Flat surface; designed for under overlay use	Rounded top surface; many legend options



SERIES	10D + 10DWY	10Q-10QM	10R-10RF 10RM	AQUAMEC™	VARIMEC™	16300-16700	16310-15
Illumination	X	X	X	X			X
Marking	X	X	X			X	X
Shape							
Round	Ø16mm		Ø30 mm	Ø10.6 mm	Ø5.2 / 7.8 / 11.6 mm		
Rectangular						6 x 12,3 mm	
Square		22 x 22 mm			5.2 / 7.8 / 11.6 mm	14.9 x 14.9 mm	15.1 x 15.1 mm
Other							
Height	12mm	11 mm	11/12,6 mm	24.2 - 27.2 mm	total height : 10.4 - 22.5 mm recess height : 2.4 - 6.4 mm	14.6 or 16.9 mm	16 mm
Front Panel Sealing	IP67	X	X	X			
Other specifications		Flat top surface Optional metal plate with legend	Rounded or flat top surface Optional metal plate with legend	Robust front panel sealed solution	2400 options in variable heights	Many functions incl quiet with unimec switches	1-4 LED Many functions incl quiet with unimec switches



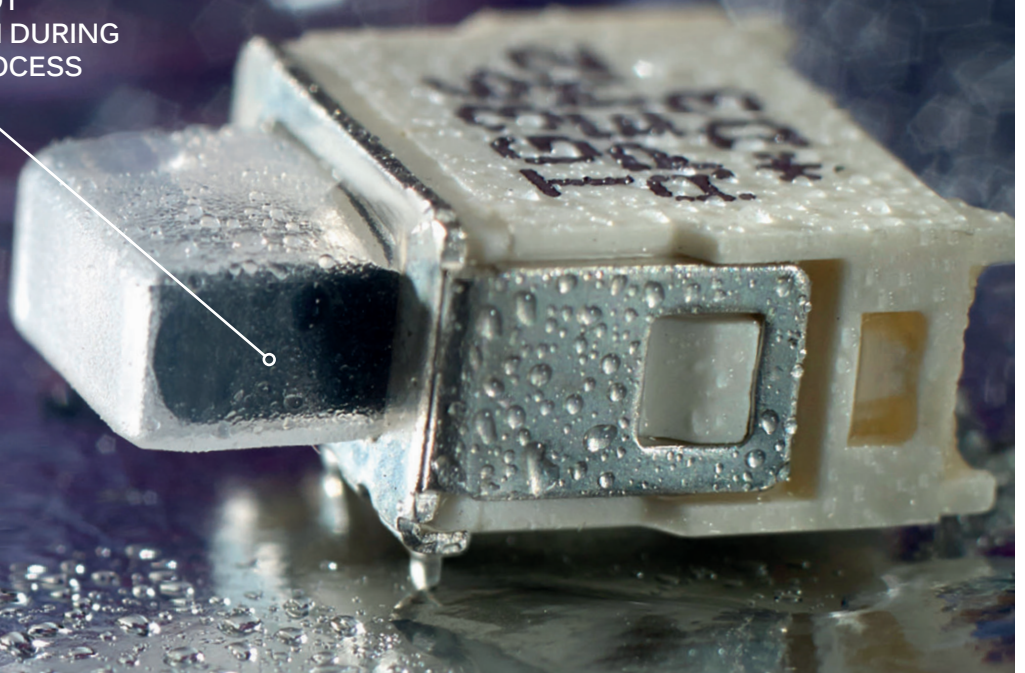
SERIES	16324-26	Rockermec	Ultrनावimec	10S/10T/ 10U/10V	10G
Illumination	X	X	X		
Marking	X	X	X	X	
Shape					
Round			Ø22,14mm	Ø6,5 / Ø11,5mm	Ø11.5 mm
Rectangular		10,6x28mm			
Square	15.1 x 15.1 mm			11,5x11,5mm	
Other				Traingle: 11,5x11,5mm, R3mm	
Height	20.5 mm	12,15mm	7,15mm	7,5mm	4.9 mm
Front Panel Sealing		IP67	IP67		
Other specifications	1-2 LED Many functions incl quiet with unimec switches	Low below panel height: 9mm	Excellent illumination with LEDs on the PCB	Many design combinations	Concave cap Floating mounting Anti-rotation for printed caps

The most common configurations are presented in this catalog. Other commercially available configurations already existing in our different ranges of products, non-standard and custom products are available upon request.

# SUBMINIATURE AND SLIDE SWITCHES

APEM  
BEST  
SELLER

WASHABLE  
A TOTALLY SEALED BOOT  
PROTECTS THE SWITCH DURING  
THE PCB CLEANING PROCESS



## TG SERIES - TOTALLY SEALED



DESIGNED FOR SURFACE MOUNT



RESISTANT TO VIBRATIONS

## OUR RANGE

For more information, see APEM website



SERIES	SMT TL	TL	SMT TP	TP	SMT TR	TR	NK
<b>Approvals</b>							
<b>Poles</b>	1	1,2	1	1,2	1	1,2	1
<b>Maximum ratings</b>	0,4 VA 20 V AC/DC	0,5 A 48 V AC/DC	0,4 VA 20 V AC/DC	0,5 A 48 V AC/DC	0,4 VA 20 V AC/DC	0,5 A 48 V AC/DC	500 mA 12 VDC
<b>Mounting options</b>							
Horizontal SMT	X		X		X		
Vertical right angle SMT	X		X				
Vertical Through-hole		X		X		X	X
Horizontal Through-hole		X		X		X	
Vert. right angle TH		X		X		X	X
Panel							
<b>Terminal options</b>							
PCB	X	X	X	X	X	X	X
Solder lugs							
Wire wrap		X					
<b>Sealing</b>	Process	Process	Process	Process	Process	Process	



SERIES	SMT TG	TG	G	25000N	PHAP 40	D162	PHAP5-X
<b>Approvals</b>				UL			
<b>Poles</b>	1	1	1,2	1,2	2	1	1
<b>Maximum ratings</b>	0,4 VA 20 V AC/DC	0,5 A 48 V AC/DC	3 A 30 VDC	(2 A 250 VAC)* 1 A 30VDC	100 mA 30 VDC	50 mA 12 VDC	50 mA 12 VDC
<b>Mounting options</b>							
Horizontal SMT	X						
Vertical right angle SMT		X	X	X		X	X
Vertical Through-hole		X	X	X	X		X
Horizontal Through-hole			X				X
Vert. right angle TH			X				
Panel			X				X
<b>Terminal options</b>							
PCB	X	X	X	X	X	X	X
Solder lugs			X				
Wire wrap			X				
<b>Sealing</b>	Process	Process	No	No	No		

\* See applicable approvals

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# DIP AND CODED ROTARY SWITCHES

## IKN SERIES - MINIMAL SPACE REQUIRED



FRENCH PRODUCTION & QUALITY  
DESIGNED FOR SURFACE MOUNT



WASHABLE BY CONSTRUCTION



UP TO 8 POLES

APEM  
DESIGN

LOW PROFILE:  
OVERALL HEIGHT FROM PCB  
LESS THAN 3 MM

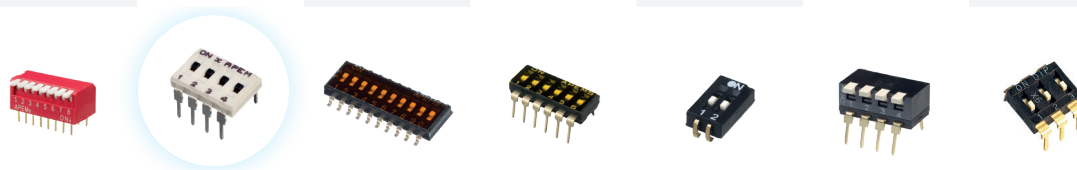


## OUR RANGE

For more information, see APEM website



SERIES	DH1	P25	P36	P65	PT65	NDS	NDA
Type	Coded rotary	Coded rotary	Coded rotary	Coded rotary	Coded rotary	DIP	DIP
Number of positions	1-10	10 & 16	10 & 16	4, 6, 10, 16	10 & 16	1-12 (except 11)	2-12 (except 11)
Maximum ratings	0.1 A 42 V	0.1 A 42 V	400 mA 24 VDC	100 mA 42 VDC	400 mA 24 VDC	25 mA 24 VDC	25 mA 24 VDC
Process sealed	No	No	Yes		Yes	With optional tape	With optional tape
Height	SMT	SMT and SMT J Bend	Through-hole: 3.65 mm SMT: 3.85 mm	Through-hole and SMT Gull wing	6.5 mm	5.85 mm	9.9 mm
<b>Mounting options</b>							
SMT	X	X	X	X			
Through-hole			X	X	X	X	X
Right angle - Through-hole					X		



SERIES	NDP	IKN	IKH	IKD	IKC	IKP	IKE
Type	DIP	DIP	Half pitch DIP	DIP	DIP	DIP	DIP
Number of positions	2-12 (except 11)	2-8 (even only)	2-10 (even only)	1-12	2-10 (even only)	2-10 (even only)	1-12 (except 11)
Maximum ratings	25 mA 24 VDC	100 mA 48 VDC	25 mA 50 VDC	25 mA 50 VDC	25 mA 24 VDC	25 mA 24 VDC	25 mA 24 VDC
Process sealed	With optional tape	With optional tape	With optional tape	With optional tape	With optional tape	With optional tape	No
Profile off PCB	10.2 mm	Through-hole: 4 mm SMT: 2.85 mm	1.5 mm	Through-hole: 3.6 mm SMT: 3 mm	2.3 mm	Through-hole: 5 mm, SMT: 5 mm	Through-hole: 3.4 mm SMT: 3.80 mm
<b>Mounting options</b>							
SMT		X	X	X	X	X	X
Through-hole	X	X		X		X	X
Right angle - Through-hole						X	

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# Q SERIES LED INDICATORS

## Q22 SERIES - UNLIMITED DESIGN POSSIBILITIES



LONG LIFE EXPECTANCY



A LARGE CHOICE OF  
MODELS: DIAMETERS, BEZEL  
SHAPES, FINISHES, COLORS,  
TERMINALS, POWER SUPPLY...



CUSTOM ENGRAVING

APEM  
BEST  
SELLER

SUPER BRIGHT LEDs  
for good visibility even  
in bright daylight

## OUR RANGE

For more information, see APEM website



SERIES	Q6	Q8	Q10	Q12	Q14	Q16	Q19	Q22	Q25	Q30
<b>Panel cut-out</b>	6 mm	8 mm	10 mm	12 mm	14 mm	16 mm	19 mm	22 mm	25 mm	30 mm
<b>Voltage range</b>	2 VDC 28 VAC/DC	2 VDC 220 VAC/DC	2 VDC to 28 VAC/DC	2 VDC 220 VAC/DC	2 VDC 220 VAC/DC	2 VDC 220 VAC/DC	2 VDC 220 VAC/DC	2 VDC 220 VAC/DC	12 VDC/AC to 24 VDC/AC	12 VDC/AC to 24 VDC/AC
<b>Sealing</b>	IP67	IP67	IP67	IP67	IP67	IP67	IP67	IP67	IP67	IP67
<b>Bezel style</b>										
Prominent	X	X		X	X	X	X (+extra)	X		
Recessed	X	X		X		X	X	X		
Flush	X	X		X	X	X	X	X		
Chamfered			X					X	X	X
<b>Terminal options</b>										
Solder lugs / fastons	X	X		X	X	X	X	X		
Pins	X	X		X	X	X	X	X		
Wires	X	X	X	X	X	X	X	X	X	X
<b>Bezel finish</b>										
Chrome (bright / satin / black)	X	X		X	X	X	X	X		
Stainless steel		Flush only	X					X	X	X
Anodized		X	X		X			X		
<b>Type of illumination</b>										
Fixed light	X	X	X	X	X	X	X	X	X	X
Flashing	X	X	X	X	X	X	X	X		
Bi-color	X	X	X	X	X	X	X	X		
Tri-color		X	X	X	X	X	X	X		
Secret until lit						X		X		
<b>LED colors</b>										
Standard colors	6	6	6	6	6	6	6	5	5	5
Superbright colors	6	6	6	6	5	5	5	3		
Hyperbright colors	4	4	4	4	4	4	4			

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# LED INDICATORS

QH SERIES - FOR STYLISH INTUITIVE VISUAL FEEDBACK



CLEAR ON OR OFF STATUS INDICATION



HIGH QUALITY HYPER BRIGHT LEDs



IP67 SEALING



4 DIFFERENT CUT-OUT AVAILABLE

APEM  
INNOVATION

AVAILABLE WITH  
PROTECTION GUARD:  
INNER DIAMETER  
PROTECTION FOR  
NO ACCIDENTAL  
SWITCH OPERATION

ZERO DEPTH  
FROM BEHIND PANEL

## OUR RANGE

For more information, see APEM website



SERIES	QRM6	QRM8	QRM14	QRM-NV
Panel cut-out	6 mm	8 mm	14 mm	8 mm
Voltage range	2 VDC 28 VAC/DC	2 VDC 28 VAC/DC	2 VDC to 28 VDC	2 VDC 28 VAC/DC
Sealing	IP67	IP67	IP67	IP67
Bezel style				
Rear mount	X	X	X	X
Terminal options				
Pins	X	X		X
Wires	X	X	X	X
Bezel finish				
Black chrome	X	X	X	X
No bezel	X	X		X
Anodized			X	
Type of illumination				
Fixed light	X	X	X	X
Bi-color	X	X	X	
Tri-color		X	X	
Night vision				X
LED colors				
Standard colors	5	5	6	NVIS colors
Superbright colors	6	6	6	
Hyperbright colors	3	3	4	



SERIES	QH	QH30 PROTECTION GUARD	QH BOX	QS	MG	MF	E10	Ba9
Panel cut-out	16/19/22/22+	30 mm	22 + mm	6/8/10/12 mm	6/8/10/12 mm	8 mm	6/8/10/12 mm	8 mm
Voltage range	12 VDC 24 VDC	12 VDC 24 VDC	12 VDC 24 VDC	2 VDC 220 VAC/DC	12 VDC 28 VAC/DC	12 VDC 28 VAC/DC	6 VDC 230 VAC	6 VDC 230 VAC
Sealing	IP67	IP67	IP65					
Bezel style								
Flush	X	X	X	X				
Terminal options								
Solder lugs / fastons				X				
Wires	X	X	X	X				
Bezel finish								
Plastic	X	X	X	X				
No bezel					X	X	X	X
Type of illumination								
Fixed light	X	X	X	X	X	X	X	X
Flashing	X			X				
Bi-color	X			X				
Tri-color	X				10 mm only			
LED colors								
Standard colors	5 + RGB	2	1	6	5	5	5	5
Hyperbright colors				4				

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# THUMB CONTROL JOYSTICKS

TS SERIES - WHEN VISIBILITY IS LOW



HALL EFFECT TECHNOLOGY:  
PROPORTIONAL OUTPUTS



IP67 PANEL SEALING



TOTAL CURRENT DRAW  
LESS THAN 16 MA

APEM  
DESIGN

CASTLE STYLE ACTUATOR:  
ILLUMINATION OVER WIDE VIEWING ANGLE

RED OR BLUE COLOR OPTIONS



## OUR RANGE

For more information, see APEM website



SERIES	TS	TS illuminated	NV	FR	HS
Panel sealing	IP67*	IP67*	IP67 & IP69K	IP67	IP67
Mechanical lifecycle	1 million	1 million	1 million	3 million	300,000
<b>Technology</b>					
Hall effect	X	X		X	
Switching			X		X
<b>Axis</b>					
Single				X	
1 to 2 axis	X	X	X		X
<b>Output option</b>					
Single	X	X		X	
Dual	X	X		X	
Analog	X	X			
PWM	X	X			
USB	X	X			
<b>Mounting option</b>					
	Drop-in, rear mounting & bush mount	Drop-in, rear mounting & bush mount	Drop-in & bush mount	Drop-in, rear mounting & bush mount	Drop-in, rear mounting & bush mount



SERIES	HR	HR360	HR friction hold	CW	TW
Electronics sealing	IP68	IP68	IP68	Sealed electronics	IP67
Mechanical lifecycle	5 million	1 million	100,000	3 million	5 million
<b>Technology</b>					
Hall effect	X	X	X	X	X
Switching					
<b>Axis</b>					
Single	X	X	X	X	X
1 to 2 axis					
<b>Output option</b>					
Quadrature		X			
Single	X		X	X	X
Dual	X		X	X	X
Analog	X	X	X	X	X
PWM					
USB					
<b>Mounting option</b>					
	Rear mounting	Rear mounting	Rear mounting	Snap-in	Drop-in

\*Subject to mounting style

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# FINGERTIP JOYSTICKS

HF SERIES - PRECISION FINGERTIP CONTROL



HIGHLY RELIABLE: UP TO IP67 SEALED,  
HALL EFFECT TECHNOLOGY



AVAILABLE IN 2 & 3 AXIS: ANALOG,  
DIGITAL USB & CAN BUS OUTPUT



ERGONOMIC: SEVERAL HANDLE  
OPTIONS AVAILABLE

APEM  
INNOVATION

ERGONOMICALLY DESIGNED  
FOR REPETITIVE OPERATION  
OVER EXTENDED PERIODS

EASY TO OPERATE



## OUR RANGE

For more information, see APEM website



SERIES	PC	HF	XF	JC	3000	BHN/BL	BF/BD	M
<b>Panel sealing</b>	up to IP67*	up to IP67	IP67		IP65*	IP67	IP67	
<b>Mechanical lifecycle</b>	1 million	5 million	5 million	5 million	10 million	10 million	5 million	1 million
<b>Technology</b>								
Hall effect	X	X	X	X	X	X	X	
Potentiometer								X
Switching	X							
<b>Axis</b>								
Single						X	X	
1 to 2 axis	X							
Up to 3 axis		X	X	X	X			X
<b>Output option</b>								
Single		X	X	X	X			X
Dual		X	X		X	X	X	
Analog	X	X	X		X	X	X	X
PWM					X	X	X	
USB	X	X	X					
CAN bus		X	X					
Detents						X	X	
<b>Mounting option</b>		Drop-in or rear mounting	Drop-in or rear mounting	Rear mounting	Drop-in or rear mounting	Drop-in	Drop-in	Rear mounting



SERIES	4000	1000	1000HE	8000	SN	NZ
<b>Sealing</b>	Up to IP65	Up to IP65	IP67	IP65*	-	IP67
<b>Mechanical lifecycle</b>	5 million	5 million	1 million	1 million	1 million	1 million
<b>Technology</b>						
Hall effect					X	
Potentiometer	X					
Switching		X	X	X		X
<b>Axis</b>						
Single					X	
1 to 2 axis	X	X	X	X		X
Up to 3 axis						
<b>Output option</b>						
Single	X				X	
Dual						
Analog	X				X	
PWM					X	
USB						
CAN bus						
<b>Mounting option</b>	Rear mounting	22 mm bushing 4 point screw	Rear mounting	Drop-in or rear mounting	Drop-in or rear mounting	Bush

\* Depending on configuration

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# HANDGRIP & DESKTOP JOYSTICKS

APEM  
DESIGN

MULTIFUNCTION HANDLE  
HALL EFFECT ROLLERS AND  
UP TO SIX PUSHBUTTONS

3 POSITION FNR SWITCH AND ONE  
MOMENTARY PUSHBUTTON

SMALL, CURVED HANDLE  
FOR OPTIMUM COMFORT

**XD RT SERIES - WHEN DEDICATED RIGHT HANDED OPERATION IS REQUIRED**



HALL EFFECT TECHNOLOGY  
RATED FOR OVER 10M OPERATIONS



IP67 ABOVE PANEL SEALING



SIL2 COMPATIBLE

## OUR RANGE

For more information, see APEM website

### HANDGRIP



SERIES	CJ	HJ	XD	XD RT	MS	FG
<b>Panel sealing</b>	Up to IP67	Up to IP63	IP67	IP67	Up to IP67	Up to IP65
<b>Mechanical lifecycle</b>	5 million	5 million	10 million	10 million	5 million	-
<b>Technology</b>						
Hall effect	X	X	X	X	X	
<b>Axis</b>						
Single						
1 to 2 axis	X		X	X		
Up to 3 axis		X			X	
<b>Output option</b>						
Single	X	X			X	
Dual	X	X	X	X	X	
Analog	X	X			X	X
USB	X	X			X	X
CAN bus	X	X	X	X	X	X
<b>Mounting option</b>						
	Drop-in	Drop-in	Drop-in	Drop-in	Drop-in	Drop-in

### USB DESKTOP



SERIES	IPD	VM	RS
<b>Sealing</b>	-	-	-
<b>Mechanical lifecycle</b>	3 million	3 million	3 million
<b>Technology</b>			
Hall effect	X	X	X
<b>Axis</b>			
Up to 3 axis	X	X	X
<b>Output option</b>			
USB	X	X	X

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# STANDARD PANEL SOLUTIONS

## V SERIES - THE MOST ROBUST STANDARD KEYPAD



EXTREME ROBUSTNESS: IK09 IMPACT RESISTANCE



PANEL SEALED TO IP65



HIGHLY CUSTOMIZABLE: ROUND OR SQUARE KEYS, CUSTOM MARKINGS, ILLUMINATION

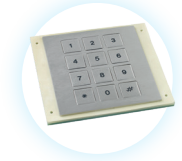
APEM  
RELIABILITY

CHEMICALLY ETCHED  
WEAR-RESISTANT LEGENDS

316L STAINLESS STEEL:  
FRAME AND KEYTOPS

## OUR RANGE

For more information, see APEM website



SERIES	EM	KP6 CAN	KP6 STANDARD	V
Technology	Membrane on PCB	Elastomer	Elastomer	Metal
Material	Polyester	Elastomer	Elastomer	Stainless steel
Illumination	No	Yes	Yes	Yes
Custom marking option	Yes	Yes	Yes	Yes
Mounting	Surface mounting	Snap-in	Snap-in	Rear mounting
Front sealing panel	IP65 / IP67 / IP69K	IP65	IP65	IP65
Mechanical life cycle	300 000	1 million	1 million	1 million
Resistance				IK09
Size of the keys	Custom	Rectangular	Rectangular	Round: Ø17 mm & 20 mm Square: 17 x 17 mm, 22 x 22 mm
Number of keys				
1				X
3	Up to 3			
4				X
5				
6		X	X	
12				X
16				X



SERIES	PQ	PR	PZ
Technology	Metal	Metal	Metal piezo
Material	Stainless steel	Stainless steel	Anodized aluminum
Illumination	Yes	Yes	Yes
Custom marking option	Yes	Yes	Yes
Mounting	Rear mounting	Front and rear mounting	Front and rear mounting
Front sealing panel	IP65	IP65	IP68
Mechanical life cycle	1 million	1 million	10 million
Resistance	IK07	IK07	
Size of the keys	Square: 12,5 x 12,5 mm & 15 x 15 mm"	Round: Ø14 mm	Round: Ø15,5 mm
Number of keys			
1		X	
3			
4	X	X	
5		X	
6			
12	X	X	X
16	X	X	

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# CUSTOM PANEL SOLUTIONS



Discover also our webpage dedicated to panel solutions:  
[apem-solution.com/panel-solutions](http://apem-solution.com/panel-solutions)



ROBUST CONTACTS AND RESISTANT  
MATERIALS FOR LONG LIFE EXPECTANCY

APEM  
FULLY  
CUSTOM

ON DEMAND ELECTRONICS  
& SOFTWARE INTEGRATION

INTEGRATION OF CAN BUS  
OR OTHER PROTOCOL  
AND SAFETY FEATURES ON DEMAND

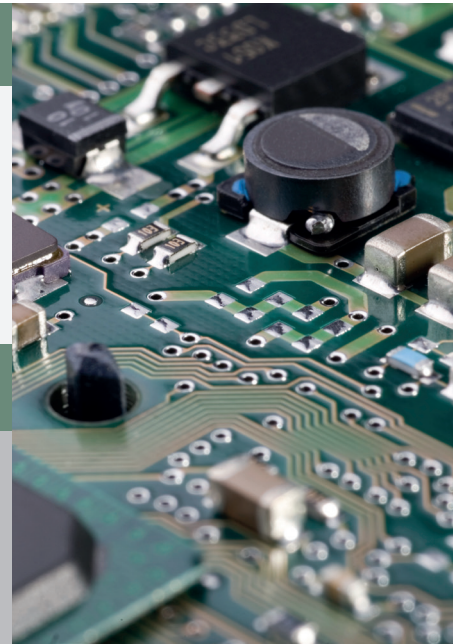
SEALING UP TO IP69K, IP68

ELECTRONICS CAPABILITIES

We have an internal team dedicated to work with the electronics throughout the development and production. They are the experts who take care of the testing and qualification of the solution.

The increasing number of options and connected equipment leads to the choice of bus type interconnections (CAN, USB, RS485, RS422...).

APEM simplifies the integration of communication protocols by proposing electronic and software designs complying with the needs of most applications. Our internal electronic teams manage the integration of communication protocols such as CAN, RS485, RS422, USB, specific displays (LCD graphics, 5 segments, NVIS LEDs), as well as protection filters (ESD, EMI, power network) and power supplies (power converters).



SAFETY STANDARDS AND LEVELS

APEM develops ISO/EN safety compatible products, combining hardware and software solutions which provide customers with integrated HMI products or solutions and bringing high levels of safety to their systems.

APEM follows the evolution of safety standards in different areas to ensure correct PL (performance level) as well as compatible SIL (safety integration level) of customer applications.

With our dedicated product offering, quick and efficient customization, mastery of switching technology and industry standards, we understand and work with our customers as a preferred supplier.



MEMBRANE KEYBOARD SOLUTIONS

Our ISO9001 and ISO14000 qualified facilities allow the supply of high quality membrane keypads, meeting the expectations of demanding applications, markets and customers, at a competitive price.

MEMBRANE ON PCB

Membrane keypad technology on a PCB provides more design options. The PCB provides an opportunity to add intelligence to the solutions, e.g. more options regarding backlighting. It also means that communication protocols can be used. Furthermore, the wider choice of components allows the option for more efficient components on the PCB.

ELASTOMERIC SOLUTIONS

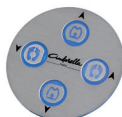
The APEM elastomer keyboards offer a low cost, customizable solution for harsh environments with sealing up to IP69K and standard communication protocols including CAN, USB & RS432. Designs may include detailed backlighting options and custom actuation travel up to 3.5mm.

MEC PCB SWITCH PANELS

Keyboards based on the MEC product range offer high end features including panel sealing, exceptional illumination, durability, and elegance. The MEC range includes high performance tactile switches and aesthetic caps & accessories.

PLASTIC CAPACITIVE TECHNOLOGY

Made with either polycarbonate or glass filled materials, the APEM capacitive keyboards meet the strict requirements necessary in critical applications including shock resistance. Plastic capacitive technology provides the ability to create a versatile design with different sizes and shapes buttons, sliders, and proximity sensing.



METAL KEYCAP SOLUTIONS

Metal keycap keypads are mechanical pushbuttons mounted on a PCB. These keypads also have a metal frame to meet the highest level of vandal resistant specifications with a visually appealing design. Our different standard ranges are composed of different shapes and sizes and can be assembled to provide a custom aesthetic look. Key backlighting is available in all colors, including RGB.

METAL PIEZO TECHNOLOGY

The APEM Piezo keyboards incorporate a highly reliable pressure sensitive keypad in a visually appealing package. With the highest level of sealing, the Piezo keyboards consume no power when idle.

METAL CAPACITIVE TECHNOLOGY

APEM Metal Capacitive mixes the advantages of both capacitive technology and mechanical push to provide your HMI a new look and feel. This all-metal capacitive technology is robust and smooth looking. This technology, along with the electronics, provides endless possibilities for control and illumination.

MIL-AERO

Mil-aero solutions are fully customized panels. They are designed to handle harsh environments and can withstand dust, liquid, chemicals, shocks, impact, vibration, and pressure. The panel is available with metal, elastomer, or membrane keys in a metal housing with the integration of extra functions, like MIL tactile screen, rotary, and guards.



## NOT FINDING YOUR HMI ? LET'S DEVELOP IT TOGETHER !

With robust development processes, and with the support of experts in ergonomics and design, APEM offers a unique expertise in HMI customization. APEM engineers will recommend the best ergonomics, shape, marking, backlighting, material, waterproofing, connectors... in line with your expectations and environment.

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

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