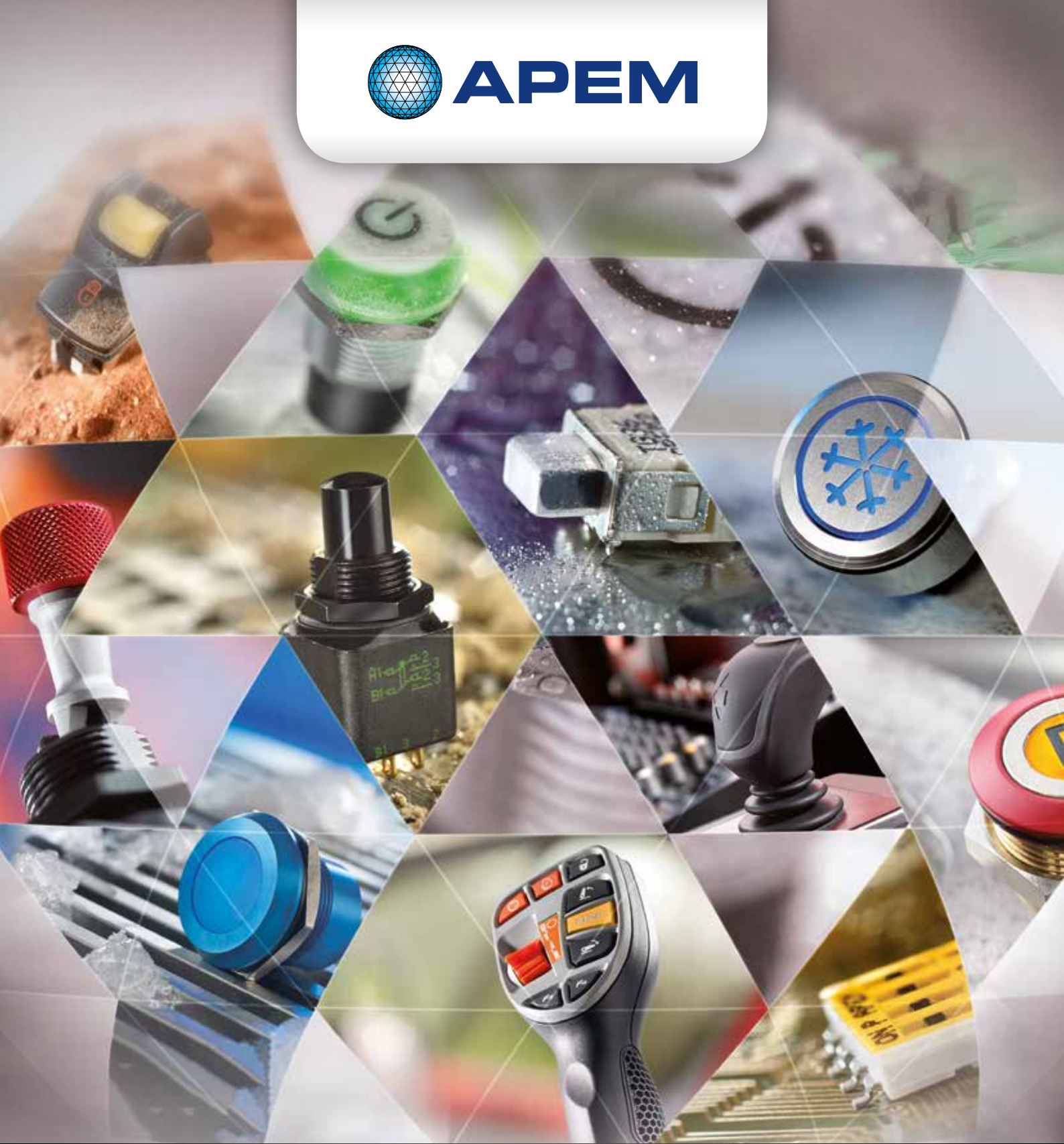




**APEM**



# THE BROADEST RANGE OF HMI COMPONENTS & SOLUTIONS

PANEL SWITCHES

PCB SWITCHES

LED INDICATORS

JOYSTICKS

SWITCH PANELS

CUSTOM

[www.apem.com](http://www.apem.com)

# A GLOBAL FOOTPRINT...

OVER 65 YEARS OF EXPERIENCE



PANEL SWITCHES	PCB SWITCHES	LED INDICATORS	JOYSTICKS	SWITCH PANELS	CUSTOM
PAGES 4-15	PAGES 16-21	PAGES 22-23	PAGES 24-27	PAGES 28-29	PAGES 30-31



# YOUR EXPERT & PARTNER

APEM offers the widest range of HMI components & solutions.

## TECHNICAL & INDUSTRIAL EXCELLENCE

APEM is a vertically integrated manufacturer, ensuring top quality components and enhanced responsiveness. We develop, manufacture & sell our own manufactured range of products.

We continuously strive to innovate to meet demanding customer requirements, focusing on high standards of safety, quality and reliability.

APEM's products are certified to major international quality standards.

## APEM EXPERTISE

Our innovation strategy is built upon our key industry requirements and our product development road map.

We offer fast and efficient customization from customer specific modifications of standard products to brand new custom designs, utilizing our knowledge and mastery of switching technology and industry standards.

We are constantly innovating to meet the future needs of our customers.



# TOGGLE SWITCHES

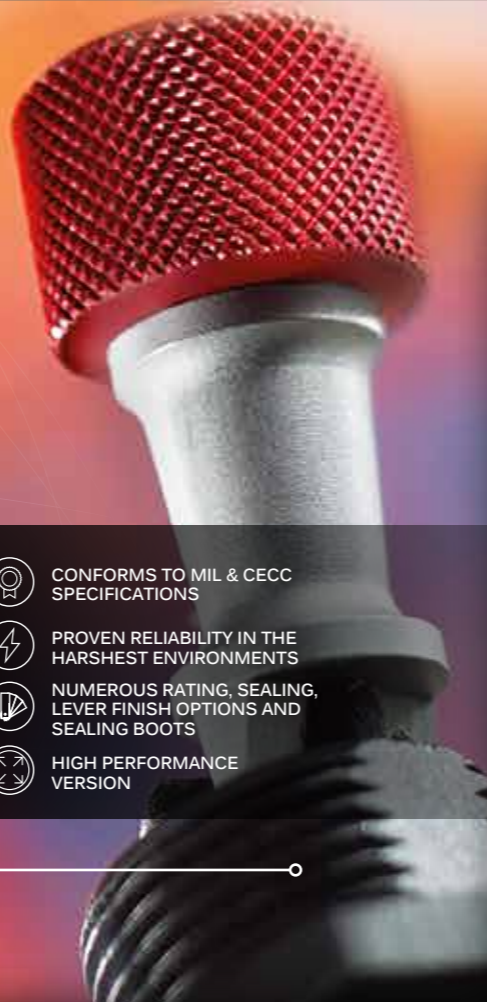
**12000 SERIES**  
ROBUST SWITCHES  
FOR HIGH SPECIFICATION  
ENVIRONMENTS

**APEM  
BEST SELLER**

**APEM  
EXCLUSIVE**

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

-  CONFORMS TO MIL & CECC SPECIFICATIONS
-  PROVEN RELIABILITY IN THE HARSHTEST ENVIRONMENTS
-  NUMEROUS RATING, SEALING, LEVER FINISH OPTIONS AND SEALING BOOTS
-  HIGH PERFORMANCE VERSION



## OUR RANGE

For more information, see APEM website



SERIES	10600	11000	12000	12000X778	1000
<b>Approvals</b>		CECC	CECC	CECC - MIL	
<b>Poles</b>		1,2,3,4	2,3,4	2,3,4	1
<b>Maximum ratings</b>	3A 24VDC	4A 30VDC	4A 30VDC	4A 30VDC	6A 30VDC
<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
<b>Sealing</b>	No	Optional	Optional	IP67	No



SERIES	ZL	S & SF	5000	5000M	55000	21000N
<b>Approvals</b>		UL - CECC	VDE - UL - CSA CECC	UL - CSA	VDE - UL - CSA	CECC
<b>Poles</b>	1	1,2	1,2,3,4	1,2,3,4	2	1,2
<b>Maximum ratings</b>	500MA 48VDC	(2A 250VAC)* 4A 30VDC	(3A 250VAC)* 4A 30VDC	(3A 250VAC)* 4A 30VDC	3A 250VDC	4A 30VDC
<b>Bushing dimensions</b>						
Ø6 (.236)			X		X	
Ø6,35 (1/4)		X	X		X	X
Ø10 (.393)						
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			
<b>Sealing</b>	No	Process	Optional	Optional	No	Optional



SERIES	4600-4400	600H-600NH	660	3500	3600NF	6000
<b>Approvals</b>	VDE - UL - CSA	NF - VDE - UL - CSA		CECC	UL	
<b>Poles</b>	1,2,3	1,2,3	4	1,2	1,2	1,2,3,4
<b>Maximum ratings</b>	(4A 250VAC)*	(15A 250VAC)* 10A 24VDC	10A 30VDC	15A 28VDC	(6A 250VAC)* 15A 28VDC	6,5A 30VDC
<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
<b>Sealing</b>	No	Optional	Optional	IP67, IP69K	IP67	Optional



# "I" RANGE PUSHBUTTON SWITCHES



## IR SERIES INCREASED VISIBILITY

ILLUMINATED BEZEL

SPECIFIC BACKLIGHTING  
for visibility in any viewing  
angle

LARGE DIAMETER :  
16 MM

FRONT PANEL SEALING

LARGE CHOICE OF OPTIONS:  
COLOR, SHAPE, MARKING,  
ILLUMINATION

APEM EXCLUSIVE

### OUR RANGE

For more information,  
see APEM website



SERIES	IC	IL	IM	IP momentary	IP latching	IB	IS	IHS Hall effect	IHL Hall effect
Approvals			UL	UL	UL	UL	UL		
Poles	1	1	1	1	1	1	1	1 NPN	1
Maximum ratings	5A 28VDC	2A 24VDC	(2A 250VAC)* 3A 28VDC	(2A 250VAC)* 5A 28VDC	(2A 250VAC)* 4A 12VDC	(2A 250VAC)* 100mA 48VDC	(2A 250VAC)* 100mA 48VDC	50mA 24VDC	1,25mA 4,5VDC
Illuminated		X		X	X				
Bushing dimensions									
Ø12 (.472)	X	X	X	X	X	X	X	X	X
Mounting options									
Panel	X	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		
Quick-connect	X		X	X	X	X	X		
Screw									
Flying leads	X	X		X	X			X	X
Sealing	IP67	IP67	IP67	IP67	IP67	IP54	IP67	IP67	IP67



SERIES	IQ momentary	IQ latching	IZ metal	IZ plastic	IR microswitch	IR standard	IR latching	IA	IF
Approvals									
Poles	1	1	1	1	1	1	1	1	1
Maximum ratings	5A 28VDC	4A 12VDC	4A 48VDC	4A 48VDC	5A 250VAC	5A 28VDC	4A 12VDC	2A 24VDC	100mA 48VDC
Illuminated	X	X	X	X	X	X	X		
Bushing dimensions									
Ø16 (.629)	X	X	X	X	X	X	X	X	X
Mounting options									
Panel			Rear	Rear	X	X	X	X	X
Snap-in	X	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		X
Screw	X		X	X		X			
Flying leads	X	X	X	X		X	X	X	
Sealing	IP54	IP54	IP67	IP67	IP67	IP67	IP67	IP67	IP67

# PUSHBUTTON SWITCHES

APEM DESIGN

**13000X778 SERIES**  
HIGH RELIABILITY AND PERFORMANCE

APEM EXCLUSIVE

MILITARY GRADE  
CECC 96401-0001 APPROVAL

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	200mA 24VDC	200mA 24VDC	1A 24VDC	4A 12VDC	4A 12VDC	20mA 5VDC	5A 12VDC 100mA 12VDC	50mA 24VDC
Illuminated	X	X	X	X	X		X	X
Bushing dimensions								
Ø 14								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				
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 (Ø 24 only)	IP69K	IP68	IP53	IP65

## OUR RANGE

For more information, see APEM website



SERIES	ZP	9100-9200-9500	SP	8000	9400-9600	10400
Approvals			UL	UL		CECC
Poles	1	1	1,2	1,2	1	1,2
Maximum ratings	500mA 48VDC	100mA 30VDC	(1A 120VAC)* 1A 30VDC	(3A 250VAC)* 4A 30VDC	1A 30VDC	3A 24VDC
Bushing dimensions						
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	
Mounting options						
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
Terminal options						
PCB	X	X	X	X	X	
Solder lugs	X	X		X	X	X
Quick-connect					X	
Sealing	No	Optional	Process	Optional	Optional	No



SERIES	13000	13000X778 momentary	13000X778 alternate	18000	1200	1400	4700-4800
Approvals	UL - CECC	CECC			NF - UL - CSA		VDE - UL - CSA
Poles	1,2	2,3	2	1,2	1	1	1,2
Maximum ratings	(2A 250VAC)* 4A 30VDC	4A 28VDC	4A 28VDC	7A 30VDC	(4A 250VAC)* 4A 24VDC	6A 12VDC	(3A 250VAC)*
Bushing dimensions							
Ø6,35 (1/4)	X			X			
Ø10 (.393)							
Ø11,9 (15/32)	X	X	X				
Ø 12 (.472)					X		X
Mounting options							
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	
Terminal options							
PCB	X	X	X	X			
Solder lugs	X	X	X	X	X	X	X
Quick-connect					X	X	X
Screw					X		
Sealing	Optional	IP67	IP67	No	No		No



# AV SERIES PUSHBUTTON SWITCHES



**AV SERIES  
WITHSTANDS ANY  
AGGRESSIVE USE**

- ★ RESISTANT to demanding environmental requirements (rain/frost/salt/UV), and to vandalism
- ★ IK & IP: TESTED & QUALIFIED PRODUCTS
- 🎨 APPEALING AESTHETICS : MATERIALS, COLORS, CONTRAST, BRIGHT OR DIM ILLUMINATION, EMBOSING, BRAILLE MARKING, SHAPES & DIMENSIONS...
- 💧 RESISTANT MATERIALS : STAINLESS STEEL, FLAME-RETARDANT PLASTICS...

APEM EXCLUSIVE

## OUR RANGE

For more information, see APEM website

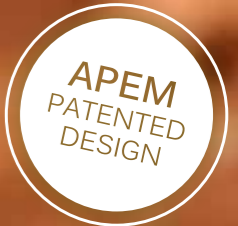


MODELS	AV 19/22 mm anti-vandal, mom.	AV 250V latching	AV 16 mm momentary	AV16 latching	AV 19/22 mm momentary	AV 19/22 mm NC/NO	AV 19/22 mm latching
<b>General specifications</b>							
Anti-vandal (IK08/IK10)	X						
Security		X	X	X	X	X	X
Approvals	UL - CSA	NF			UL - CSA		
Sealing	Up to IP65	Up to IP65	Up to IP65	Up to IP65	Up to IP65	Up to IP67	Up to IP65
Illumination						X	X
Marking					X		
<b>Electrical specifications</b>							
Maximum ratings	2A 48VDC (4A 250VAC)*	(1A 250VAC)*	0,2A 48VDC	1A 24 VDC	2A 48VDC (4A 250VAC)*	1A 30VDC	2A 48VDC
Momentary (NO)	X				X		
Momentary (NO) tactile			X				
Momentary NC/NO						X	
Latching		X		X			X
<b>Diameter and shape</b>							
Ø 16 (.629) Flat		AV06100	AV063	AV061			
Ø 16 (.629) Curved		AV16100	AV163	AV161			
Ø 19 (.748) Flat	AV09	AV09100			AV09	AV9	AV09.EA
Ø 19 (.748) Curved	AV19	AV19100			AV19		AV19.EA
Ø 22 (.866) Flat	AV03	AV03100			AV03	AV3	AV03.EA
Ø 22 (.866) Curved	AV02	AV02100			AV02		AV02.EA



MODELS	AV 19 mm tactile, mom.	AV 19/22 mm tactile overmolded	AV 19/22/24 mm	AV 30 mm NC/NO	AV 22 mm NC	AV 22 mm alternate	AV 22 mm mushroom head
<b>General specifications</b>							
Security	X	X	X	X	X	X	X
Approvals			NF - UL		NF	VDE - UL - CSA	NF - UL
Sealing	Up to IP65	Up to IP67, IP69K	IP65 , IP69K	Up to IP67	Up to IP65	Up to IP65	IP65
Illumination	X	X		X			
Marking	X	X		X	X	X	
<b>Electrical specifications</b>							
Maximum ratings	50mA 24VDC	50mA 24VDC	5A 250VAC	1A 30VDC	2A 250VAC	3(1,5)A 250VAC	5A 250VAC
Momentary (NC)					X		
Momentary (NO) tactile	X	X					
Momentary NC/NO			X	X			X
Alternate						X	
<b>Diameter and shape</b>							
Ø 19 (.748) Flat	AV09C7	AV9S	AV19LP				
Ø 19 (.748) Curved	AV19C7		AV19LB				
Ø 22 (.866) Flat		AV3S	AV22LP		AV031200	AV044700	
Ø 22 (.866) Curved			AV22LB		AV021200		
Ø 24 (.944) Flat			AV24LP				
Ø 24 (.944) Curved			AV24LB				
Ø 24 (.944) Concave			AV24LC				
Ø 30 (1.181) Flat				AV5			

# ROCKER SWITCHES



## KL SERIES PROVEN RELIABILITY



MODERN APPEARANCE & INTUITIVE ERGONOMICS FOR EASY ONE-HAND ACTIVATION

APEM PATENTED DESIGN

APEM  
EXCLUSIVE

NO RISK OF INADVERTENT SWITCHING

HIGH MECHANICAL STRENGTH

IP68 FRONT PANEL SEALING

CUSTOMIZABLE: MARKING, BACKLIGHTING

### OUR RANGE

For more information, see APEM website



SERIES	S & SR	AS	MT	7000	FM
Approvals	UL	UL - CSA		UL - CSA	UL - VDE
Poles	1,2	1	1	1,2	1
Maximum ratings	(2A 250VAC)* 4A 30VDC	(2A 250VAC)*	4A 30VDC	(3A 250VAC)* 4A 30VDC	(10A 250VAC)*
Illuminated					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
Rear mounting	X			X	
Panel cut-out		18,65 x 8,9	Ø 17,65		19,2 x 12,9
<b>Terminal options</b>					
PCB	X	X	X	X	X
Solder lugs	X	X	X	X	X
Quick-connect					X
Sealing	Process	No	IP68	No	Optional boot



SERIES	2600	KR	KL	KI	KG
Approvals	NF-VDE-UL-CSA				VDE
Poles	1,2	1,2	1,2	-	1,2
Maximum ratings	(16A 250VAC)*	10A 24VDC	10A 24VDC	24VDC	(12A 250VAC)* 15A 12VDC
Illuminated	X	X	X	X	X
<b>Mounting options</b>					
Snap-in	X	X	X	X	X
Panel cut-out	30 x 22	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
Quick-connect	X	X	X	X	X
Screw	X	X	X		X
Connectors		X	X	X	X
Sealing	Optional boot	IP68	IP68	IP68	IP65



# INDUSTRIAL CONTROL SWITCHES

## A1 SERIES DESIGN AND AESTHETICS



★ BACKLIT LEGENDS ON METAL INSERTS

★ CHEMICAL ETCHING OF METAL INSERTS FOR LIGHT PASSAGE

🔍 METAL ASPECT & FLUSH MOUNTING FOR A SLEEK APPEARANCE

☀️ BACKLIGHTING, VISIBLE EVEN IN STRONG DAYLIGHT

🔘 CUSTOMIZABLE: MARKING, BACKLIGHTING

APEM EXCLUSIVE

### OUR RANGE

For more information, see APEM website



SERIES	A1	A01	A01	A02	A02
Type	Pushbutton / Indicator	Pushbutton / Indicator	Keylock / Selector	Pushbutton / Indicator	Keylock / Selector
Approvals	UL - VDE	UL - VDE	UL - VDE	UL - VDE	UL - VDE
Poles	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4
Sealing	IP65	IP65	IP65	IP65	IP65
Back panel sealing	Option	Option	Option	No	IP40
Illuminated	Yes	Yes	No	Yes	No
Maximum ratings	6A 250VAC 6A 12VDC	6A 250VAC 6A 12VDC	6A 250VAC 6A 12VDC	16A 250VAC 12A 12VDC	16A 250 VAC 12A 12VDC
<b>Panel cut-out</b>					
Ø 16 mm		X	X		
Ø 19 mm					
Ø 22 mm	X	X	X	X	X
Ø 30 mm				X	
Flush mounting	Yes	Option	Option	Yes	Option
<b>Terminal options</b>					
Solder lugs	X	X	X		
Quick-connect	X	X	X	Option	Option
Screw				X	X
Straight PC					
PCB mounting	Option	Option	Option	No	



SERIES	LK	A01ES-D	A02ES-I	A02ES-H	ES
Type	Keylock	Emergency stop	Emergency stop	Emergency stop	Emergency stop
Approvals	UL	UL - VDE - DEMKO	UL - TUV	UL - TUV	
Poles	1,2,3,4	1,2	1,2	1,2	2,3
Sealing	IP65	IP65	IP65	IP65	IP65,IP67,IP69K
Back panel sealing	IP40	IP40	IP20	IP20	No
Illuminated	No	No	Option	No	No
Maximum ratings	2A 250 VAC 4A 125 VAC/28 VDC	1,5A 250VAC AC-15	6A 240 VAC 8A 24 VDC	3A 250 VAC 2A 30 VDC	1A 24VDC
<b>Panel cut-out</b>					
Ø 16 mm		X			
Ø 19 mm	X				
Ø 22 mm			X	X	X
Ø 28 mm					X
Flush mounting					No
<b>Terminal options</b>					
Solder lugs	X	X			X
Quick-connect		X			
Screw			X	X	
Straight PC					X
PCB mounting		Option			No



# TACTILE SWITCHES



## MULTIMEC™ 5 HIGH PERFORMANCE

MEC EXCLUSIVE

10 MILLION TROUBLE-FREE ACTUATIONS

REFLOW SOLDERABLE

LARGE CHOICE OF CAPS AND ACCESSORIES

AVAILABLE IN NC/NO



### OUR RANGE

For more information, see APEM website



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 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



SERIES	10G	1A/1H/ 1M/1ZA	1B/1C/ 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	Ø11 mm			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	4.9 mm	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	Concave cap Floating mounting Anti-rotation for printed caps	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



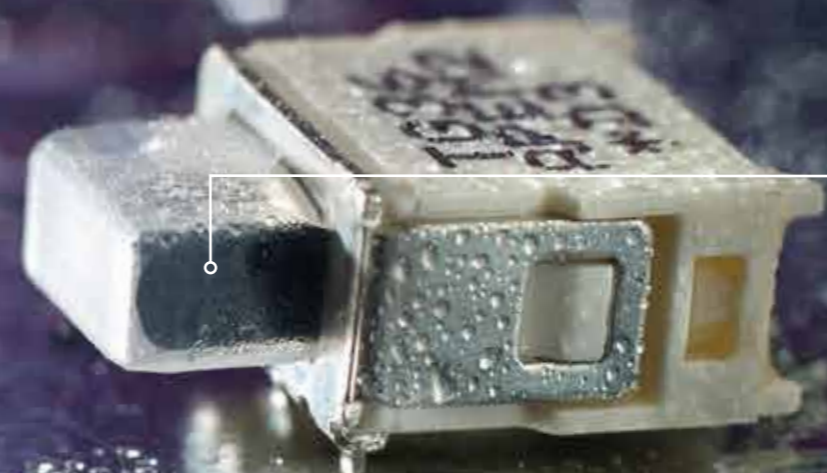
SERIES	1PS/1QS/ 1RS	1SS/1IS/ 1LS	1TS/1US/ 1VS	1WAS/1WDS/ 1WPS	1XS	1YS	1ZCS	NAVIMEC™
Illumination	X	X	X	X	X	X	X	X
Marking							X	X
Shape								
Round		Ø6.5 mm	Ø10.6 mm				Ø14.3 mm	Ø34.25 mm
Rectangular	6.5 x 12.5 mm				7.4 x 9.4 mm			
Square			10.6 x 10.6 mm			15.1 x 15.1 mm		5.2 / 7.8 / 11.6 mm
Other			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	12.2 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	To navigate a display or control a unit; five piece solution



SERIES	CONTROLMEC™	10Q-10QM	10R-10RF 10RM	AQUAMEC™	VARIMEC™	16300- 16700	16310-15	16324-26
Illumination	X	X	X	X			X	X
Marking	X	X	X			X	X	X
Shape								
Round	Ø29.5 mm		Ø30 mm	Ø10.6 mm	Ø5.2 / 7.8 / 11.6 mm			
Rectangular								
Square		22 x 22 mm			5.2 / 7.8 / 11.6 mm	14.9 x 14.9 mm	15.1 x 15.1 mm	15.1 x 15.1 mm
Other								
Height	12 mm (sealed) 12.3 mm (non-sealed)	11 mm	11 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	20.5 mm
Front Panel Sealing	X	X	X	X				
Other specifications	To navigate a display or control a unit; one cap solution	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	1-2 LED Many functions incl quiet with unimec switches



# SUBMINIATURE AND SLIDE SWITCHES



## TG SERIES TOTALLY SEALED

★ **WASHABLE.**  
A totally sealed boot protects the switch during the PCB cleaning process

APEM EXCLUSIVE

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



SERIES	NK	SMT TG	TG	G	25000N	PHAP 40	PHAP 33
<b>Approvals</b>					UL		
<b>Poles</b>	1	1	1	1,2	1,2	2	1
<b>Maximum ratings</b>	500mA 12VDC	0,4VA 20V AC/DC	0,5A 48V AC/DC	3A 30VDC	(2A 250VAC)* 1A 30VDC	100mA 30VDC	50mA 12VDC
<b>Mounting options</b>							
Horizontal SMT		X					X
Vertical right angle SMT	X		X	X	X		X
Vertical Through-hole	X		X	X	X	X	X
Horizontal Through-hole				X			X
Vert. right angle TH				X			X
Panel				X			
<b>Terminal options</b>							
PCB	X	X	X	X	X	X	X
Solder lugs				X			
Wire wrap				X			
<b>Sealing</b>	No	Process	Process	No	No	No	Process



# DIP AND CODED ROTARY SWITCHES

## IKN SERIES MINIMAL SPACE REQUIRED

★ LOW PROFILE:  
OVERALL HEIGHT FROM PCB  
LESS THAN 3 MM

🇫🇷 FRENCH PRODUCTION & QUALITY  
DESIGNED FOR SURFACE MOUNT

💧 WASHABLE BY CONSTRUCTION

8 UP TO 8 POLES

APEM  
EXCLUSIVE

### 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	0.1A 42V	0.1A 42V	400mA 24VDC	100mA 42 VDC	400mA 24VDC	25mA 24VDC	25mA 24VDC
Process sealed	No	No	Yes		Yes	With optional tape	With optional tape
Profile off PCB	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
Mounting options							
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	25mA 24VDC	100mA 48VDC	100mA 50VDC	25mA 50VDC	25mA 24VDC	25mA 24VDC	25mA 24VDC
Process sealed	With optional tape	With optional tape	With optional tape	Yes	Yes option	Yes option	No
Profile off PCB	10.2 mm	Through-hole: 4 mm SMT: 2.85 mm	1.6 mm	3 mm	SMT J Bend	Through-hole and SMT	Through-hole: 3.4 mm SMT: 3.80 mm
Mounting options							
SMT		X	X	X	X	X	X
Through-hole	X	X		X		X	X
Right angle - Through-hole						X	



# LED INDICATORS

## Q SERIES UNLIMITED DESIGN POSSIBILITIES

APEM EXCLUSIVE

★ SUPER BRIGHT LEDs for good visibility even in bright daylight

∞ LONG LIFE EXPECTANCY

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

⦿ CUSTOM ENGRAVING

### OUR RANGE For more information, see APEM website



SERIES	Q6	Q8	Q12	Q14	Q16	Q19	Q22	QH
Panel cut-out	6 mm	8 mm	12 mm	14 mm	16 mm	19 mm	22 mm	16/19/22/22+
Voltage range	2VDC 28VAC/DC	2VDC 220VAC/DC	2VDC 220VAC/DC	2VDC 220VAC/DC	2VDC 220VAC/DC	2VDC 220VAC/DC	2VDC 220VAC/DC	12VDC 24VDC
Sealing	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	X
Chamfered							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
<b>Bezel finish</b>								
Chrome (bright / satin / black)	X	X	X	X	X	X	X	
Stainless steel							X	
Anodized				X			X	
Plastic					X		X	X
<b>Type of illumination</b>								
Fixed light	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	
Secret until lit					X		X	
<b>LED colors</b>								
Standard colors	6	6	6	6	6	6	5	5 + RGB
Superbright colors	6	6	6	5	5	5	3	
Hyperbright colors	4	4	4	4	4	4		



SERIES	QRM6	QRM8	QRM-NV	QS	MG	MF	E10	Ba9
Panel cut-out	6 mm	8 mm	8 mm	6/8/10/12 mm	6/8/10/12 mm	8 mm	6/8/10/12 mm	8 mm
Voltage range	2VDC 28VAC/DC	2VDC 28VAC/DC	2VDC 28VAC/DC	2VDC 220VAC/DC	12VDC 28VAC/DC	12VDC 28VAC/DC	6VDC - 230VAC	6VDC - 230VAC
Sealing	IP67	IP67	IP67					
<b>Bezel style</b>								
Flush				X				
Rear mount	X	X	X					
<b>Terminal options</b>								
Solder lugs / fastons				X				
Pins	X	X	X					
Wires	X	X	X	X				
<b>Bezel finish</b>								
Black chrome	X	X	X					
Plastic				X				
No bezel					X	X	X	X
<b>Type of illumination</b>								
Fixed light	X	X	X	X	X	X	X	X
Flashing				X				
Bi-color	X	X	X	X				
Tri-color		X	X	10 mm only				
Night vision			X					
<b>LED colors</b>								
Standard colors	5	5	NVIS colors	6	5	5	5	5
Superbright colors	6	6						
Hyperbright colors	3	3		4				

# JOYSTICKS



## HF SERIES PRECISION FINGERTIP CONTROL

★ ERGONOMICALLY DESIGNED FOR REPETITIVE OPERATION OVER EXTENDED PERIODS

★ EASY TO OPERATE

💧 HIGHLY RELIABLE : UP TO IP67 SEALED, HALL EFFECT TECHNOLOGY

📏 AVAILABLE IN 2 & 3 AXIS : ANALOG, DIGITAL USB & CANBUS OUTPUT

👤 ERGONOMIC: SEVERAL HANDLE OPTIONS AVAILABLE

APEM EXCLUSIVE

### OUR RANGE

For more information, see APEM website

#### THUMB CONTROL

#### FINGERTIP



SERIES	TS	NV	FR	HS	HR	CW	TW	PC	HF	3000
<b>Sealing</b>	IP67 & IP69K	IP67 & IP69K	IP67	IP67 & IP69K	IP68	-	IP67	IP67	IP67	IP65
<b>Mechanical lifecycle</b>	1 million	1 million	3 million	300,000	5 million	3 million	5 million	1 million	5 million	10 million
<b>Technology</b>										
Hall effect	X		X		X	X	X	X	X	X
Potentiometer										
Switching		X		X				X		
<b>Axis</b>										
Single			X		X	X	X			
1 to 2 axis	X	X		X				X		
Up to 3 axis									X	X
<b>Output option</b>										
Single	X		X		X	X	X		X	X
Dual	X		X		X		X		X	X
Analog	X				X	X	X	X	X	X
PWM	X					X			X	X
USB	X							X	X	
CANbus									X	
<b>Mounting option</b>										
	Drop-in, rear mounting & bush mount	Drop-in & bush mount	Drop-in, rear mounting & bush mount	Drop-in, rear mounting & bush mount	Rear mounting	Snap-in	Drop-in		Drop-in or rear mounting	Drop-in or rear mounting

#### FINGERTIP



SERIES	BH/BL	BF/BD	M	4000	1000	1000HE	8000	SN	NZ
<b>Sealing</b>	IP67	IP67	IP65	IP65	IP67	IP67	IP65	-	IP67
<b>Mechanical lifecycle</b>	10 million	5 million	1 million	5 million	5 million	1 million	1 million	1 million	1 million
<b>Technology</b>									
Hall effect	X	X						X	
Potentiometer			X	X					
Switching					X	X	X		X
<b>Axis</b>									
Single	X	X						X	
1 to 2 axis					X	X	X		X
Up to 3 axis			X	X					
<b>Output option</b>									
Single	X	X	X	X				X	
Dual	X	X							
Analog	X	X	X	X				X	
PWM	X	X						X	
USB									
CANbus									
<b>Mounting option</b>									
	Drop-in	Drop-in	Rear mounting	Rear mounting	22 mm bushing 4 point screw	Rear mounting	Drop-in or rear mounting	Drop-in or rear mounting	Bush

# JOYSTICKS



## CJ SERIES MULTI-FUNCTION HAND GRIP CONTROL

APEM  
BEST SELLER

★ ERGONOMIC AND VERSATILE DESIGN FOR SAFETY CRITICAL APPLICATIONS

★ EASY TO INSTALL AND OPERATE

🔹 HIGHLY RELIABLE: SEALED UP TO IP67 / HALL EFFECT TECHNOLOGY

🔹 ANALOG, CANBUS AND USB OUTPUTS AVAILABLE / 1 & 2 AXIS CONTROL

🔹 ERGONOMIC AND VERSATILE HAND GRIP WITH MULTIPLE BUTTON OPTIONS

APEM  
EXCLUSIVE

### OUR RANGE For more information, see APEM website

#### HANDGRIP



SERIES	SC	CJ	HJ	XD	MS	FG
<b>Sealing</b>	IP67 & IP69K	IP67	IP67	IP67 & IP69K	IP67	IP67
<b>Mechanical lifecycle</b>	10 million	5 million	5 million	10 million	10 million	-
<b>Technology</b>						
Hall effect	X	X	X	X	X	
<b>Axis</b>						
Single	X					
1 to 2 axis		X		X		
Up to 3 axis			X		X	
<b>Output option</b>						
Single	X	X	X		X	
Dual	X	X	X	X	X	
Analog	X	X	X		X	X
USB		X	X		X	X
CANbus		X	X	X	X	X
<b>Mounting option</b>						
	Drop-in	Drop-in	Drop-in	Drop-in or rear mounting	Drop-in	Drop-in

#### 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

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. Standard modifications include varying cable length, connector choice and the use of a variety of standard components within the joystick handle – please refer to factory.

# SWITCH PANELS



## ELECTRONIC & SOFTWARE DESIGN

★ INTEGRATION OF COMMUNICATION PROTOCOLS SUCH AS CANOPEN, CAN J1939, ISOBUS, USB & RS432

APEM EXCLUSIVE



EASY FRONT MOUNTING



CONSISTENT BACKLIGHTING, NO VISUAL FATIGUE



FRONT MOUNTED EXTRA SLIM BACKLIT KEYBOARD

3.24 mm +0.4/-0.2

### OUR RANGE

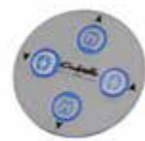
For more information, see APEM website

#### EQUIPMENT

APEM designs and manufactures complete custom panels incorporating keyboards, switches, joysticks and other discrete components from our extensive range of products or qualified suppliers.

Our internal electronic team allows for the integration of:

- Communication protocols: LIN, CAN, RS4xx, USB, ...
- Displays management: LCDs graphics, 5 segments & NVIS LEDs
- Extreme ambient conditions : ESD, EMI, hot & cold
- Power supply: power converter, filter and protection of power network



#### HARSH ENVIRONMENT KEYBOARD

Our ruggedized keyboards combine critical electronic and software design expertise, along with our core knowledge of milling, printing and discrete switch integration. APEM's extensive development process allows us to meet critical military specifications such as MIL, STANAG and GAN.

#### MEMBRANE KEYPAD

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..

#### THIN BACKLIGHTED

The APEM thin backlit panel enables the use of front mounted interface products with a high quality backlit design and status LED indicators. This 3mm thick keyboard will easily allow membrane keypad users to bring backlit features to their products.

#### FILM IN MOLD

The APEM Film In Mold (FIM) technology features molded pushbuttons designed into a printed plastic film. The FIM technology combines an extremely low profile keypad with durable markings at a competitive price for large quantities.

#### METAL KEYBOARD

APEM's stainless steel keyboards meet the highest level of vandal resistant specifications (IK10) with a visually appealing design. Resistant to the harshest environments, our stainless steel keyboards are weather proof and can withstand most corrosive agents.

#### CAPACITIVE

APEM designs and manufactures capacitive keyboards to compliment its range of capacitive buttons. Made with either polycarbonate or glass filled materials, the APEM capacitive keyboards meet the strict requirements necessary in critical applications including shock resistance.

#### ELASTOMER KEYBOARD

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.

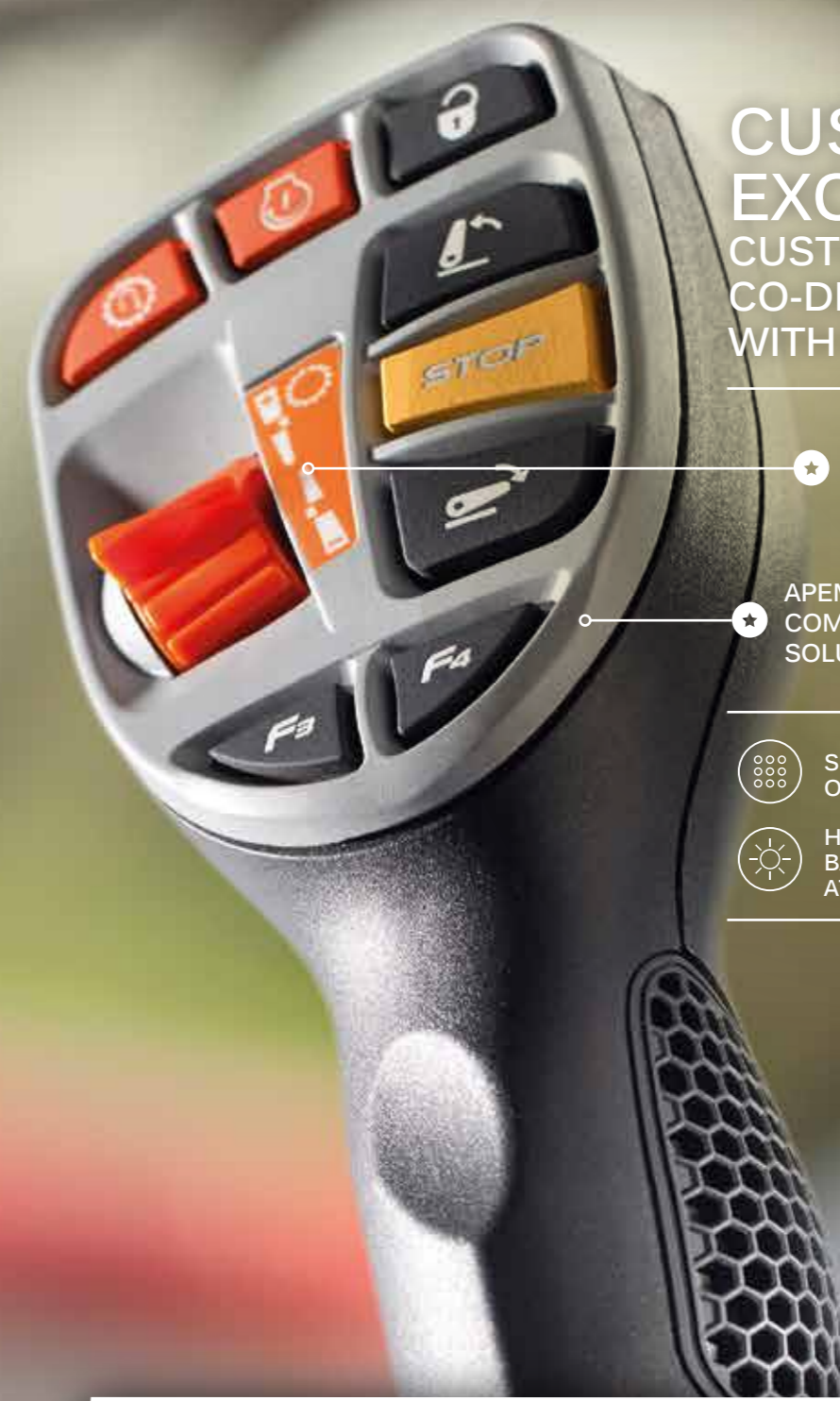
#### PIEZO KEYBOARD

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.

#### MEC BASED KEYBOARD

MEC based keyboards offer high end features including extreme sealing, exceptional illumination, durability and elegance. In the event of machine upgrades or accidental damage, the foil overlay is easily exchangeable.

# CUSTOM CAPABILITIES



## CUSTOMER EXCLUSIVITY CUSTOM PRODUCTS CO-DEVELOPED WITH CUSTOMERS

- ★ SWITCHES, MEMBRANE KEYPADS & CANBUS CONNECTIVITY
- ★ APEM'S EXPERTISE WITH COMPLETE INTERFACE SOLUTIONS
- SPACE AND FUNCTION OPTIMIZATION
- HIGH VISIBILITY WITH BACKLIGHTING AND ATTRACTIVE FINISH

APEM EXCLUSIVE



## A GLOBAL APPROACH

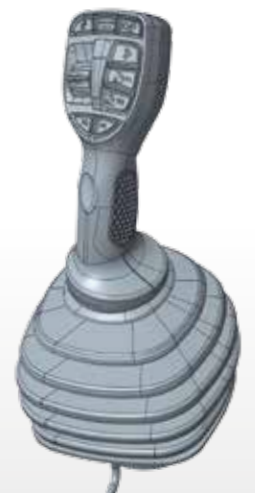
- UNLIMITED HMI COMBINATIONS
- COMPLETE INTERFACE SOLUTIONS
- ELECTRONIC & SOFTWARE DESIGN

APEM offers a large range of over 50,000 part numbers consisting of switches, indicators, joysticks and switch panels in different colors, markings, finishes, shapes and dimensions... creating an unlimited amount of possibilities.

### APEM's complete interface solutions

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

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





# WORLDWIDE SALES & CUSTOMER SUPPORT

PANEL SWITCHES

PCB SWITCHES

LED INDICATORS

JOYSTICKS

SWITCH PANELS

CUSTOM

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