APEM

THE BROADEST RANGE OF
HMI COMPONENTS & SOLUTIONS

| PANEL SWITCHES | PCB SWITCHES | LED INDICATORS | JOYSTICKS | SWITCH PANELS | CUSTOM |

www.apem.com

APEM

A GLOBAL FOOTPRINT...
OVER 65 YEARS OF EXPERIENCE

APEM SWEDEN

APEM UK   MEC DENMARK

APEM BENELUX

APEM USA

APEM USA   APEM FRANCE   APEM GERMANY

APEM ITALY

APEM CHINA
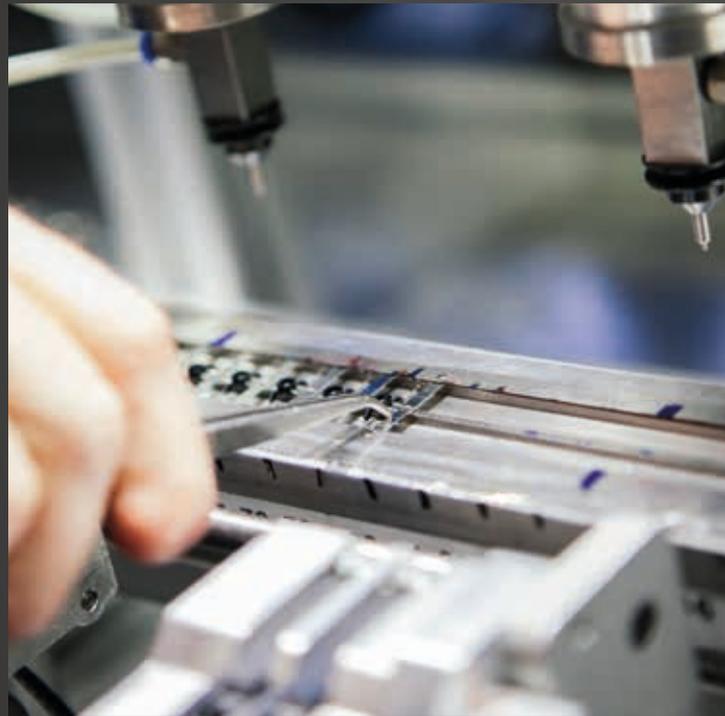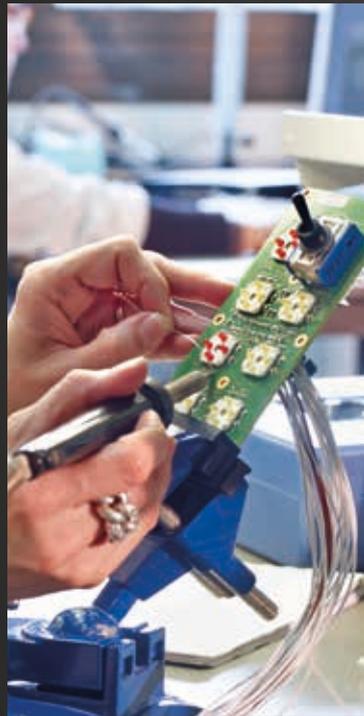
YOUR EXPERT & PARTNER

**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.

A WORLD OF SWITCHING CAPABILITIES

TOGGLE SWITCHES

12000 SERIES
ROBUST SWITCHES FOR HIGH SPECIFICATION ENVIRONMENTS

APEM EXCLUSIVE

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

APEM BEST SELLER

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

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	500MA 48VDC	(2A 250VAC)* 4A 30VDC	(3A 250VAC)* 4A 30VDC	(3A 250VAC)* 4A 30VDC	3A 250VDC	4A 30VDC
Bushing dimensions						
Ø6 (.236)			X		X	
Ø6,35 (1/4)		X	X		X	X
Ø10 (.393)						
Ø11,9 (15/32)			X	X		
Mounting options						
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
Terminal options						
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

* See applicable approvals

OUR RANGE

For more information, see APEM website

SERIES	10600	11000	12000	12000X778	1000
Approvals		CECC	CECC	CECC - MIL	
Poles		1,2,3,4	2,3,4	2,3,4	1
Maximum ratings	3A 24VDC	4A 30VDC	4A 30VDC	4A 30VDC	6A 30VDC
Bushing dimensions					
Ø6,35 (1/4)		X			
Ø10 (.393)	X				
Ø11,9 (15/32)			X	X	
Ø12 (.472)					X
Mounting options					
Vertical - Through-hole		X	X	X	
Horizontal - Through-hole		X			
Vert. right angle - Through-hole					
Panel	X	X	X	X	X
Terminal options					
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	(4A 250VAC)*	(15A 250VAC)* 10A 24VDC	10A 30VDC	15A 28VDC	(6A 250VAC)* 15A 28VDC	6,5A 30VDC
Bushing dimensions						
Ø11,9 (15/32)				X		X
Ø12 (.472)	X	X	X		X	
Mounting options						
Vertical - Through-hole	X					
Panel	X	X	X	X	X	X
Terminal options						
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

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

OUR RANGE

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

* See applicable approvals

IR SERIES
INCREASED VISIBILITY

APEM EXCLUSIVE

★ **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

For more information,
see APEM website

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

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.

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	50m 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	No	IP69K	IP68	IP53	IP65

* See applicable approvals

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

OUR RANGE

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
General specifications							
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		
Electrical specifications							
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
Diameter and shape							
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

* See applicable approvals

AV SERIES
WITHSTANDS ANY AGGRESSIVE USE

APEM RELIABILITY

APEM EXCLUSIVE

★ 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, EMBOSSING, BRAILLE MARKING, SHAPES & DIMENSIONS...

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

For more information, see APEM website

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
General specifications							
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	
Electrical specifications							
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	
Diameter and shape							
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		AV22PNA
Ø 24 (.944) Flat			AV24LP				
Ø 24 (.944) Curved			AV24LB				
Ø 24 (.944) Concave			AV24LC				
Ø 30 (1.181) Flat				AV5			

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.

ROCKER SWITCHES

OUR RANGE

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 30VCC	(10A 250VAC)*
Illuminated					X
Mounting options					
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
Terminal options					
PCB	X	X	X	X	X
Solder lugs	X	X	X	X	X
Quick-connect					X
Sealing	Process	No	No	No	Optional boot

* See applicable approvals

KL SERIES
PROVEN RELIABILITY

APEM
PATENTED DESIGN

★ 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

For more information,
see APEM website

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
Mounting options					
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
Terminal options					
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

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.

13

INDUSTRIAL CONTROL SWITCHES

OUR RANGE

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
Panel cut-out					
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
Terminal options					
Solder lugs	X	X	X		
Quick-connect	X	X	X	Option	Option
Screw				X	X
Straight PC					
PCB mounting	Option	Option	Option	No	

A1 SERIES
DESIGN AND AESTHETICS

★ BACKLIT LEGENDS ON METAL INSERTS

★ CHEMICAL ETCHING OF METAL INSERTS FOR LIGHT PASSAGE

APEM EXCLUSIVE

METAL ASPECT & FLUSH MOUNTING FOR A SLEEK APPEARANCE

BACKLIGHTING, VISIBLE EVEN IN STRONG DAYLIGHT

CUSTOMIZABLE: MARKING, BACKLIGHTING

For more information, see APEM website

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
Panel cut-out					
Ø 16 mm		X			
Ø 19 mm	X				
Ø 22 mm			X	X	X
Ø 28 mm					X
Flush mounting					No
Terminal options					
Solder lugs	X	X			X
Quick-connect		X			
Screw			X	X	
Straight PC					X
PCB mounting		Option			No

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.

15

TACTILE SWITCHES

mec switches

MULTIMEC™ 5
HIGH PERFORMANCE

MEC EXCLUSIVE

★ 10 MILLION TROUBLE-FREE ACTUATIONS

✓ REFLOW SOLDERABLE

LARGE CHOICE OF CAPS AND ACCESSORIES

AVAILABLE IN NC/NO

MEC INNOVATION

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 retetion, 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

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.

17

SUBMINIATURE AND SLIDE SWITCHES

OUR RANGE

SERIES	SMT TL	TL	SMT TP	TP	SMT TR	TR
Approvals						
Poles	1	1,2	1	1,2	1	1,2
Maximum ratings	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
Mounting options						
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						
Terminal options						
PCB	X	X	X	X	X	X
Solder lugs						
Wire wrap		X				
Sealing	Process	Process	Process	Process	Process	Process

* See applicable approvals

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

For more information,
see APEM website

SERIES	NK	SMT TG	TG	G	25000N	PHAP 40	PHAP 33
Approvals					UL		
Poles	1	1	1	1,2	1,2	2	1
Maximum ratings	500mA 12VDC	0,4VA 20V AC/DC	0,5A 48V AC/DC	3A 30VDC	(2A 250VAC)* 1A 30VDC	100mA 30VDC	50mA 12VDC
Mounting options							
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			
Terminal options							
PCB	X	X	X	X	X	X	X
Solder lugs				X			
Wire wrap				X			
Sealing	No	Process	Process	No	No	No	Process

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.

19

DIP AND CODED ROTARY SWITCHES

OUR RANGE

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		

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**

For more information,
see APEM website

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	

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.

21

LED INDICATORS

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
Bezel style								
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	
Terminal options								
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
Bezel finish								
Chrome (bright / satin / black)	X	X	X	X	X	X	X	
Stainless steel							X	
Anodized				X			X	
Plastic					X		X	X
Type of illumination								
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	
LED colors								
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		

Q SERIES
UNLIMITED DESIGN POSSIBILITIES

SUPER BRIGHT LEDs for good visibility even in bright daylight

APEM EXCLUSIVE

LONG LIFE EXPECTANCY

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

CUSTOM ENGRAVING

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					
Bezel style								
Flush				X				
Rear mount	X	X	X					
Terminal options								
Solder lugs / fastons				X				
Pins	X	X	X					
Wires	X	X	X	X				
Bezel finish								
Black chrome	X	X	X					
Plastic				X				
No bezel					X	X	X	X
Type of illumination								
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					
LED colors								
Standard colors	5	5	NVIS colors	6	5	5	5	5
Superbright colors	6	6						
Hyperbright colors	3	3		4				

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.

23

JOYSTICKS

OUR RANGE

	THUMB CONTROL							FINGERTIP		
SERIES	TS	NV	FR	HS	HR	CW	TW	PC	HF	3000
Sealing	IP67 & IP69K	IP67 & IP69K	IP67	IP67 & IP69K	IP68	-	IP67	IP67	IP67	IP65
Mechanical lifecycle	1 million	1 million	3 million	300,000	5 million	3 million	5 million	1 million	5 million	10 million
Technology										
Hall effect	X		X		X	X	X	X	X	X
Potentiometer										
Switching		X		X				X		
Axis										
Single			X		X	X	X			
1 to 2 axis	X	X		X				X		
Up to 3 axis									X	X
Output option										
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	
Mounting option										
	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

HF SERIES
PRECISION FINGERTIP CONTROL

APEM EXCLUSIVE

★ 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

For more information,
see APEM website

FINGERTIP								
SERIES	**BH/BL**	**BF/BD**	**M**	**4000**	**1000**	**1000HE**	**8000**	**SN**	**NZ**
Sealing	IP67	IP67	IP65	IP65	IP67	IP67	IP65	-	IP67
Mechanical lifecycle	10 million	5 million	1 million	5 million	5 million	1 million	1 million	1 million	1 million
Technology									
Hall effect	X	X						X	
Potentiometer			X	X					
Switching					X	X	X		X
Axis									
Single	X	X						X	
1 to 2 axis					X	X	X		X
Up to 3 axis			X	X					
Output option									
Single	X	X	X	X				X	
Dual	X	X							
Analog	X	X	X	X				X	
PWM	X	X						X	
USB									
CANbus									
Mounting option									
	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

OUR RANGE
For more information, see APEM website

HANDGRIP					

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

CJ SERIES
MULTI-FUNCTION
HAND GRIP CONTROL

APEM BEST SELLER

APEM EXCLUSIVE

★ 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

DESKTOP		
SERIES	IPD	VM	RS
SERIES	**IPD**	**VM**	**RS**
Sealing	-	-	-
Mechanical lifecycle	3 million	3 million	3 million
Technology			
Hall effect	X	X	X
Axis			
Up to 3 axis	X	X	X
Output option			
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.

27

SWITCH PANELS

OUR RANGE

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.
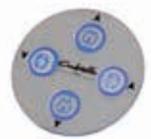
HARSH ENVIRONMENT KEYBOARD	MEMBRANE KEYPAD	THIN BACKLIGHTED	FILM IN MOLD	METAL KEYBOARD
Our ruggedized keyboards combine critical electronic and software design expertise, along with our core knowledge of milling, printing and discrete switch integration. APEM's extensive development process allows us to meet critical military specifications such as MIL, STANAG and GAN.	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..	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.	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.	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.

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   3.24 mm +0.4/-0.2

For more information, see APEM website

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

CAPACITIVE	ELASTOMER KEYBOARD	PIEZO KEYBOARD	MEC BASED KEYBOARD
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.	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.	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 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

A GLOBAL APPROACH

UNLIMITED HMI COMBINATIONS

COMPLETE INTERFACE SOLUTIONS

ELECTRONIC & SOFTWARE DESIGN

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
FULLY CUSTOM

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**

AMERICAS

USA
63 Neck Road
HAVERHILL, MA 01835-8025
Tel: (+1) 978 372 1602
Fax: (+1) 978 372 3534
info@apem.com

USA
970 Park Center Drive
VISTA, CA 92081-8395
Tel: (+1) 760 598 2518
Fax: (+1) 760 598 2524
info@apem.com

CHINA
RongGuang Building, 602A
11, Changshun Road
200051 SHANGHAI
Tel: (+86) 21 6278 8546,
    (+86) 21 6278 6872
Fax: (+86) 21 6208 8209
contact@apem.com.cn

ASIAPAC

EMEA

BENELUX
Avenue Excelsiorlaan 21
1930 ZAVENTEM
Belgium
Tel B: (+32) 27 25 05 00
Tel NL: (+31) (70) 799 91 51
Fax: (+32) 27 25 22 00
sales@apemswitches.be

DENMARK
MEC
Industriparken 23
2750 BALLERUP
Tel: (+45) 44 97 33 66
Fax: (+45) 44 68 15 14
danmec@mec.dk

FRANCE
55, avenue Edouard Herriot
BP1
82303 CAUSSADE Cedex
Tel: (+33) 5 63 93 14 98
Fax: (+33) 5 63 93 19 03
commercial@apem.fr

GERMANY
Gewerbehof Giesing
Paulsdorfferstr. 34, 2. OG
D-81549 MUNICH
Tel: (+49) 89 45 99 11 0
Fax: (+49) 89 48 10 39
info@apem.de

ITALY
Via Marconi 147G
12030 MARENE (CN)
Tel: (+39) 0172 74 31 70
Fax: (+39) 0172 74 31 71
apem.italia@apem.it

SWEDEN
Torshamnsgatan 39
S-16440 KISTA
Tel: (+46) 8 626 38 00
Fax: (+46) 8 626 82 49
info@apem.se

UNITED KINGDOM
Drakes Drive
LONG CRENDON, Bucks HP18 9BA
England
Tel: (+44) 1 844 202400
Fax: (+44) 1 844 202500
sales@apem.co.uk

MORE THAN 130 DISTRIBUTORS WORLDWIDE
(Complete list available on www.apem.com)

www.apem.com