

A yellow excavator is shown in a construction site at sunset. The excavator's arm is raised, and its bucket is open. The background features a colorful sky with orange and blue hues. A large, faint globe graphic is visible on the right side of the image.

# CONSTRUCTION MACHINERY



# APEM IN CONSTRUCTION MACHINERY

APEM offers high-reliability Human Machine Interface (HMI) products for special vehicles.

With vertically integrated manufacturing, APEM guarantees an uncompromised reliability through its custom product development, manufacturing excellence and outstanding service. APEM offers a very broad range of HMI components designed for off-highway vehicles, including joysticks, switches and keypads.



FIELD PROVEN RELIABILITY  
UNPARALLELED RANGE



YOU HAVE  
SPECIFIC NEEDS,  
WE HAVE  
DEDICATED  
SOLUTIONS



**SAFETY**  
is essential on  
construction sites

#### KL SERIES

The KL rocker is the perfect solution for construction vehicles thanks to its **reliable** interlocking mechanism preventing accidents due to unintended operation.



**ERGONOMICS**  
is critical for  
construction workers

#### TS SERIES

The TS thumbstick is a proportional two axis joystick similar in size and operation to "gamepad" controls, but in a **rugged** industrial package.



**PRODUCTIVITY**  
is key for  
construction  
companies

#### XD RT HANDLE

Build the optimal joystick **ergonomics** for the operator by using our large range of HMI components.



**EFFICIENCY**  
driven by innovation

#### NV SERIES

Instead of an expensive display controller, use our **intuitive** NV to navigate the touch panel while keeping your hand on the joystick.





## THE WIDEST RANGE OF HMI COMPONENTS FOR JOYSTICKS

INTEGRATE OUR HMI COMPONENTS IN YOUR DESIGN  
OR SELECT OUR CUSTOM JOYSTICK & HANDLE SOLUTIONS



**IA SERIES**  
Field proven reliability



**HR SERIES**  
Versatile range



**CW SERIES**  
Compact thumbwheel



**TS SERIES**  
Miniature hall effect joysticks



**IX SERIES**  
Compact and illuminated



**IM SERIES**  
Exceptional tactile feedback



**FNR SERIES**  
Robust and reliable



### XD SERIES

Shallow mounting depth < 60 mm  
Extremely robust, resists high axial load (1780 N - 400 lbf)

## WE CUSTOMIZE OUR FIELD-PROVEN QUALIFIED COMPONENTS TO BUILD YOUR UNIQUE HMI

### TAILOR-MADE FNR CONTROL



#### FNR SERIES & CUSTOM ACTUATORS

A rugged rocker available with custom actuator options designed to fit all hand sizes, reduce index fatigue and avoid inadvertent actuation



#### HR SERIES

Best-in-class thumbwheel



#### ROCKERMEC

The PCB-mounted compact solution



#### TOGGLE\*

Compact toggle ideal as a joystick-mounted FNR

\*see our toggle range on apem.com



#### MT SERIES

Highly sealed rocker switch

### CUSTOM START / STOP SOLUTIONS



#### AV30 SERIES

Large illuminated metal switch



#### FD24 SERIES

Double legend depending on the red/ green illumination



#### MULTIMEC™ 5G

Illuminated PCB switch sealed up to IP67



# PANEL SOLUTIONS

APEM offers dedicated solutions of complete HMIs or remote controls, based on its knowledge of keyboard technologies and their integration, but also the right selection of high-quality components.

By combining the expertise acquired in the construction market and its environment during the last decades, APEM provides the most suitable solution to its customers.

TECHNOLOGIES MASTERED BY APEM AND ADAPTED TO CONSTRUCTION EQUIPMENTS:

Membranes

Membranes on PCB\*

Elastomeric\*

MEC PCB switch panel\*

Metal\*

\*CAN Bus output available

## ELECTRONIC & SOFTWARE

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

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

COMMUNICATION PROTOCOLS

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

INTEGRATED BOOT LOADER

Diagnostic and software upgrade capability

ELECTRONICS AND SOFTWARE DESIGN

LOW POWER

BIT SOFTWARE

Real time Built-In-Test

FILTERING & PROTECTION

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

INTEGRATED DIMMING

## SAFETY

APEM offers standard SIL2 compliant components but also develops custom PLx (AgPLx, MPLx, ...), SILx solutions as per customer requests.

## CUSTOMER EXCLUSIVE

CUSTOM PRODUCTS  
CO-DEVELOPED WITH CUSTOMERS

APEM EXCLUSIVE

ON DEMAND ELECTRONICS & SOFTWARE INTEGRATION

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

SEALING UP TO IP69K, IP68

ROBUST CONTACTS AND RESISTANT MATERIALS FOR LONG LIFE EXPECTANCY

APEM offers a large selection of part numbers consisting of switches, indicators, joysticks and keypads in different colors, markings, finishes, shapes and dimensions... creating an unlimited combination of possibilities.

APEM develops complete interface solutions combining components (switches, keypads, indicators, joysticks), standard electronic boards and programming.

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



# OUR PRODUCTS

WHETHER IT'S A STANDARD  
PRODUCT OFFERING  
OR A CUSTOMIZED  
SOLUTION, LET APEM'S  
DECADES OF EXPERIENCE  
WORK FOR YOU

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# XD SERIES

HALL EFFECT ROBUST JOYSTICK

TOP APPLICATIONS:  
LOADER, EXCAVATOR, TELEHANDLER, MINING



## DESIGNED FOR CONSTRUCTION

<ul style="list-style-type: none"> <li>• 10 million lifecycles</li> <li>• Extreme robustness</li> <li>• Available with CAN bus J1939-71</li> <li>• Shallow mounting depth</li> <li>• IP67 above panel sealing</li> <li>• Up to 1780 N - 400 lbf horizontal load (depending on handle)</li> <li>• SIL2 / Pld capable</li> </ul>											
SERIES	MECHANICAL LIFECYCLES	AXIS	TECHNOLOGY	OUTPUT OPTIONS						MOUNTING OPTIONS	ABOVE PANEL SEALING
				Single	Dual	Analog	PWM	USB	CAN bus		
XD	10 million	1 to 2 axis	Hall effect	X	X				X	Drop-in	IP67

# HJ SERIES

HALL EFFECT ROBUST JOYSTICK

TOP APPLICATIONS:  
LOADER, DUMP TRUCK



## HEAVY DUTY AND FIELD PROVEN

<ul style="list-style-type: none"> <li>• 5M cycles</li> <li>• Standard or custom handle</li> <li>• CAN options available</li> <li>• Up to IP69K</li> <li>• Up to 180 Nm horizontal load (depending on handle)</li> <li>• SIL2 / Pld capable</li> </ul>											
SERIES	MECHANICAL LIFECYCLES	AXIS	TECHNOLOGY	OUTPUT OPTIONS						MOUNTING OPTIONS	ABOVE PANEL SEALING
				Single	Dual	Analog	PWM	USB	CAN bus		
HJ	5 million	1, 2, 3	Hall effect	X	X	X		X	X	Drop-in or rear mounting	IP69K



# XF SERIES

SMALL HALL EFFECT JOYSTICK

TOP APPLICATIONS:  
COMPACT VEHICLES, ROAD CONSTRUCTION, MINING



## AVAILABLE WITH CAN BUS

<ul style="list-style-type: none"> <li>• 5M cycles</li> <li>• Many outputs available, including CAN bus J1939</li> <li>• Available with 1, 2 or 3 axis</li> <li>• Very compact</li> <li>• SIL2 / Pld capable</li> <li>• Up to IP67 above panel sealing</li> </ul>											
SERIES	MECHANICAL LIFECYCLES	AXIS	TECHNOLOGY	OUTPUT OPTIONS						MOUNTING OPTIONS	ABOVE PANEL SEALING
				Single	Dual	Analog	PWM	USB	CAN bus		
XF	5 million	1, 2, 3	Hall effect	X	X	X		X	X	Drop-in or rear mounting	IP67

# 3000 SERIES

PREMIUM HALL EFFECT JOYSTICK

TOP APPLICATIONS:  
LOADER, ROAD CONSTRUCTION



## COMPACT, PRECISION HALL EFFECT JOYSTICK

<ul style="list-style-type: none"> <li>• Precision contactless Hall effect technology</li> <li>• Compact for low profile applications</li> <li>• Robust with over 10 million mechanical lifecycles</li> </ul>											
SERIES	MECHANICAL LIFECYCLES	AXIS	TECHNOLOGY	OUTPUT OPTIONS						MOUNTING OPTIONS	SEALING
				Single	Dual	Analog	PWM	USB	CAN bus		
3000	10 million	1, 2, 3	Hall effect	X	X	X	X			Drop-in or rear mounting	IP67



HR SERIES

PROPORTIONAL THUMBWHEEL

TOP APPLICATIONS:  
EXCAVATOR, TELEHANDLER, SKID STEER



ROLLER AVAILABLE WITH MANY OPTIONS

<ul style="list-style-type: none"> <li>Up to 5M cycles</li> <li>Electronics sealed up to IP68</li> <li>Available with detents, friction, latching and 360° infinite wheel</li> <li>7 colors and 4 shapes in standard</li> <li>Illumination of the body in option</li> <li>SIL2 / Pld capable</li> </ul>											
SERIES	MECHANICAL LIFECYCLES	AXIS	TECHNOLOGY	OUTPUT OPTIONS						MOUNTING OPTIONS	SEALING
				Single	Dual	Analog	PWM	USB	CAN bus		
HR	5 million	1	Hall effect	X	X	X				Rear mounting	IP68

CW SERIES

MINIATURE PROPORTIONAL THUMBWHEEL

TOP APPLICATIONS:  
EXCAVATOR, TELEHANDLER, LOADER



MINIATURE ROLLER

<ul style="list-style-type: none"> <li>Up to 3M cycles</li> <li>Snap-in mounting</li> <li>Custom actuator on request</li> <li>Spring to center</li> </ul>											
SERIES	MECHANICAL LIFECYCLES	AXIS	TECHNOLOGY	OUTPUT OPTIONS						MOUNTING OPTIONS	SEALING
				Single	Dual	Analog	PWM	USB	CAN bus		
CW	3 million	Single	Hall effect	X	X	X	X			Snap-in	-



TS SERIES

PROPORTIONAL HALL EFFECT THUMBSTICK

TOP APPLICATIONS:  
TELEHANDLER, EXCAVATOR, LOADER



PRECISION FINGERTIP CONTROL

<div> <div>                     • Illuminated version available                      • Ergonomically designed for repetitive operation over extended periods                 </div> <div>                     • Highly reliable: up to IP67 and IP69K sealing                      • Easy integration with rear or drop-in mounting &amp; compact size                      • Available with multiple handle options and material                 </div> </div>											
SERIES	MECHANICAL LIFECYCLES	AXIS	TECHNOLOGY	OUTPUT OPTIONS						MOUNTING OPTIONS	PANEL SEALING
				Single	Dual	Analog	PWM	USB	CAN bus		
TS	1 million	1, 2	Hall effect	X	X	X		X		Drop-in or rear mounting	IP67, IP69K

NV SERIES

NAVIGATOR SWITCH

TOP APPLICATIONS:  
ROAD CONSTRUCTION, TELEHANDLER



IDEAL AS DISPLAY CONTROLLER

<div> <div>                     • Compact momentary micro switching thumbstick                      • Available with “push to validate” option, ideal for navigation in display menu                 </div> <div>                     • Enhanced tactile feedback                      • Easy integration in joystick handle                      • Sealed up to IP69K                 </div> </div>							
SERIES	MECHANICAL LIFECYCLES	AXIS	BUSHING DIMENSIONS	TECHNOLOGY	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING
NV	1 million	1, 2	Ø16 mm (.629 in)	Switching	Wire leads or connector	Panel	IP69K



BHN/BL SERIES

PROPORTIONAL PADDLE

TOP APPLICATIONS:  
DUMP TRUCK, ROAD CONSTRUCTION



STYLISH AND ROBUST

- Available in 2 heights
- Soft touch sculpted grip
- 5 color options
- Sealed up to IP67
- Custom actuator on request
- SIL2 / PLd capable

SERIES	MECHANICAL LIFECYCLES	AXIS	TECHNOLOGY	OUTPUT OPTIONS						MOUNTING OPTIONS	SEALING
				Single	Dual	Analog	PWM	USB	CAN bus		
BHN/BL	10 million	Single	Hall effect	X	X	X	X			Drop-in	IP67

FNR SERIES

FNR ROCKER SWITCH

TOP APPLICATIONS:  
EXCAVATOR, LOADER, TELEHANDLER



FOR EFFORTLESS FORWARD/REVERSE CONTROL

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

SERIES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING
FNR	2 NO+NC	1A /24V	Ø20 mm (787 in)	Flying leads, solder lugs	Panel	IP69K & IP67



IA SERIES

DUSTPROOF PUSHBUTTON SWITCH

TOP APPLICATIONS:  
EXCAVATOR, LOADER, TELEHANDLER



THE REFERENCE IN THE CONSTRUCTION INDUSTRY

<ul style="list-style-type: none"> <li>Dustproof: Membrane on top with no gap between actuator and panel</li> <li>Frost, sand and hydrocarbon resistant</li> <li>Sealed up to IP67</li> <li>Flush on panel</li> <li>SIL2/PId capable</li> </ul>						
SERIES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING
IA	1 NO+NC	2A 24VDC	Ø16 mm (.629 in)	Flying leads	Panel	IP65 IP67

IX SERIES

COMPACT PUSHBUTTON SWITCH

TOP APPLICATIONS:  
EXCAVATOR, LOADER, TELEHANDLER



THE NEXT STANDARD

<ul style="list-style-type: none"> <li>Compact</li> <li>Available with backlit marking</li> <li>Dustproof: Membrane on top with no gap between actuator and panel</li> <li>Frost, sand and hydrocarbon resistant</li> <li>Flush on panel</li> <li>Sealed up to IP67/IP69K</li> <li>SIL2/PId capable</li> </ul>						
SERIES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING
IX	1 NO/NC	2A 28VDC	Ø12 mm (.472 in)	Solder lugs / Wire leads	Panel	IP67 IP69K



IM / IP / IS SERIES

COMPREHENSIVE PUSHBUTTON RANGE

TOP APPLICATIONS:  
SKID STEER LOADER, GRADER, TELEHANDLER



EXTENSIVE COMPACT RANGE

<ul style="list-style-type: none"> <li>• Compact</li> <li>• Available with illumination</li> <li>• Available with snap action and audible tactile feedback (IM)</li> <li>• Marking in option</li> <li>• Sealed up to IP67</li> <li>• Momentary or latching</li> <li>• Up to SIL2/PLd capable</li> </ul>										
SERIES	POLES	MAXIMUM RATINGS	ILLUMINATED	BUSHING DIMENSIONS	MOUNTING OPTIONS	TERMINAL OPTIONS				SEALING
						PCB	Solder lugs	Quick-connect	Flying leads	
IM	1 NO/NC	(1A 250VAC)* 3A •28VDC		Ø 12 mm (.472 in)	Panel	x		x		IP67
IP momentary	1	(2A 250VAC)* 5A 28VDC	x	Ø 12 mm (.472 in)	Panel	x	x	x	x	IP67
IP latching	1	(2A 250VAC)* 4A 12VDC	x	Ø 12 mm (.472 in)	Panel	x	x	x	x	IP67
IS	1	(2A 250VAC)* 100mA 48VDC		Ø 12 mm (.472 in)	Panel	x	x	x		IP67

IHS / IHL SERIES

HALL EFFECT PUSHBUTTON RANGE

TOP APPLICATIONS:  
BACKHOE LOADER, EXCAVATOR



HALL EFFECT TECHNOLOGY

<ul style="list-style-type: none"> <li>• Long life: 5M cycles</li> <li>• Hall effect technology</li> <li>• Momentary (IHS) or proportional (IHL)</li> <li>• Sealed up to IP67</li> </ul>					
SERIES	MAXIMUM RATINGS	BUSHING DIMENSIONS	MOUNTING OPTIONS	TERMINAL OPTIONS	SEALING
IHS	5mA 24VDC	Ø 12 mm (.472 in)	Panel	Flying leads	IP67
IHL	1,25mA 4,5VDC	Ø 12 mm (.472 in)	Panel	Flying leads	IP67



# FD SERIES

DOUBLE ICON ILLUMINATED PUSHBUTTON SWITCH

TOP APPLICATIONS:  
CONSTRUCTION MACHINERY DASHBOARD (ENGINE START)



# AV30 START STOP

METAL PUSHBUTTON

TOP APPLICATIONS:  
CONSTRUCTION MACHINERY DASHBOARD (ENGINE START)



## DOUBLE ICON ILLUMINATED PUSHBUTTON

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

SERIES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS							MOUNTING OPTIONS	SEALING	ILLUMINATION
				Solder lugs	Quick connect	Screw	PCB	Flying leads	Wire Wrap	Cable			
FD	1,2	4A 12VDC 200mA 12VDC	Ø24 (.944) Ø26 (1,024)	X							Panel, Snap-in or threaded bushing	IP69K (threaded bushing)	X

## RUGGED METALLIC PUSHBUTTON

- Robust pushbutton
- Stainless steel actuator and bushing
- Appealing aesthetics
- Easily customizable: marking, illumination

SERIES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS							MOUNTING OPTIONS	SEALING	ILLUMINATION
				Solder lugs	Quick connect	Screw	PCB	Flying leads	Wire Wrap	Cable			
AV	NO/NC	1 A 30 VDC	Ø30 (1.18)	X	X		X	X		X	Panel	IP67	X



KH / KL / KR SERIES

ROCKER SWITCH

TOP APPLICATIONS:  
DUMP TRUCK, LOADER



SEALED, CUSTOMIZABLE ROCKER

<ul style="list-style-type: none"> <li>Protected against accidental actuation (KH)</li> <li>Patented locking system for safety application (KL)</li> <li>Customised laser etched legends</li> <li>Illuminated versions</li> <li>Up to IP68/IP69K</li> </ul>									
SERIES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	MOUNTING OPTIONS	TERMINAL OPTIONS			SEALING	ILLUMINATION
					Solder lugs	Quick-connect	Screw		
KR	1, 2	20A 12VDC	36.8 x 21.08 mm	Panel	X	X	X	IP68 or IP69K	X
KL	1, 2	10A 24VDC	36.8 x 21.08 mm	Panel	X	X	X	IP68 or IP69K	X
KH	1, 2	10A 24VDC	36.8 x 21.08 mm	Panel	X	X	X	IP69K	X

MT SERIES

SEALED ROCKER SWITCH

TOP APPLICATIONS:  
CONCRETE CUTTER



SELECTOR SWITCHFOR ERGONOMIC INTERFACE

<div>• Environmentally sealed (IP68)</div> <div>• Multiple functions available</div> <div>• Various contact materials that allow usage from dry circuit applications up to 4 A</div>													
SERIES	APPROVALS	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS						MOUNTING OPTIONS	SEALING	ILLUMINATION
					Solder lugs	Quick connect	Screw	PCB	Flying leads	Connector			
MT			4A 30 VDC	Ø17,46	X			X			Panel, Vertical-Though hole	IP68	



**IDEC**  
**CW SERIES**

MODULAR AND STYLISH PUSHBUTTON

TOP APPLICATIONS:  
ROLLER, GRADER, PAVER



**IDEC**  
**MW SERIES**

FOR DEMANDING ENVIRONMENTS

TOP APPLICATIONS:  
ROLLER, GRADER, PAVER



NEW INDUSTRIAL STYLE

• Stylish design • Sealed up to IP67 with rubber boot option				• Illumination in option • Selector switch available			
SERIES	APPROVALS	POLES	SEALING	PANEL CUT OUT	TERMINAL	CONTACT TYPE	RATINGS
CW	UL, CE, CCC	Up to 6	IP65, up to IP67	Ø 22 mm (.866 in)	Screw	IP67	Heavy duty (up to 10 Amps)

DUSTPROOF

• Dustproof: no gap between actuator and panel • Sealed up to IP66				• Selector switch available			
SERIES	APPROVALS	POLES	SEALING	PANEL CUT OUT	TERMINAL	CONTACT TYPE	RATINGS
MW	CE, CCC	Up to 2	IP65 IP66	Ø 22 mm (.866 in)	Solder/tab or screw	Monobloc	Heavy duty (up to 10 Amps)



# ES SERIES

HEAVY DUTY METAL SAFETY SWITCH

TOP APPLICATIONS:  
ROAD CONSTRUCTION



## METAL SAFETY SWITCH

<ul style="list-style-type: none"> <li>Sealed up to IP65, IP67 &amp; IP69K</li> <li>Complies with EN60947-5-1</li> <li>Compact body</li> <li>Impact resistant to IK10</li> </ul>							
SERIES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS		MOUNTING OPTIONS	SEALING
				Solder lugs	PCB		
ES	2,3	1A 24VDC	Ø22.28 mm (.877 in)	X	X	Panel	IP65 IP67 IP69K



# XA / XW SERIES

ROBUST EMERGENCY STOP

TOP APPLICATIONS:  
ROAD CONSTRUCTION



## «SAFE BREAK ACTION» TECHNOLOGY

<ul style="list-style-type: none"> <li>Exclusive safety technology ensuring that the machinery is stopped if actuator is broken</li> <li>Compact behind panel</li> <li>Sealed up to IP67</li> <li>Available with illumination</li> <li>Twist or pull to release</li> </ul>							
SERIES	SAFE BREAK TECHNOLOGY	PANEL CUT OUT	OPERATOR SIZES	NUMBER OF CONTACTS	TERMINAL CONNECTION	OPERATION	ILLUMINATION
XA	X	16 mm	Ø 29 mm (1.141 in) Ø 40 mm (1.574 in)	Up to 4 NC : 1,2,3,4 / NO : 0,1	Solder, PCB	Push to lock, pull or turn to reset	Option
XW	X	22 mm	Ø 38 mm (1.496 in) Ø 40 mm (1.574 in) Ø 60 mm (2.362 in)	Up to 4 NC : 1,2,3,4 / NO : 0,1	Screw, solder, PCB	Push to lock, pull or turn to reset	Option



# 3500 / CT SERIES

HIGH PERFORMANCE TOGGLE SWITCH

TOP APPLICATIONS:  
PAVER, LOADER, MINING



# MULTIMEC 5 SERIES

TACTILE PCB SWITCH

TOP APPLICATIONS:  
LOADER, TELEHANDLER



## MARKET LEADER

<div> <div> <ul style="list-style-type: none"> <li>• High current rating</li> <li>• Very broad range: 5 finishes, 6 levers styles, 3 types of locking, 3 types of terminals...</li> </ul> </div> <div> <ul style="list-style-type: none"> <li>• Sealed up to IP67/IP69K</li> <li>• Available accessories: guard and boot</li> </ul> </div> </div>												
SERIES	APPROVALS	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	MOUNTING OPTIONS	TERMINAL OPTIONS						SEALING
						Solder lugs	Quick-connect	Screw	PCB	Flying leads	Connector	
3500	CECC	1,2	15A 28VDC	Ø12.2 mm (.49 in)	Panel	X	X	X				IP67 IP69K
CT	UL	1,2	10A 125/250 VAC	Ø12.2 mm (.48 in)	Panel	X	X	X			X	IP67

## LARGE SELECTION OF STANDARD ACCESSORIES

<div> <ul style="list-style-type: none"> <li>• 10 million activations</li> <li>• Front panel sealing to IP67 depending on cap solutions</li> </ul> </div> <div> <ul style="list-style-type: none"> <li>• Different haptic options</li> <li>• Wide range of cap options</li> </ul> </div>					
SERIES	POLES	MAXIMUM RATING	MOUNTING OPTIONS	SEALING	MECHANICAL LIFE
Multimec 5 series - 5E & 5G	Single pole / momentary	50mA - 24VDC	Trough hole or SMT mounting	IP67	10,000,000 operations



Q SERIES

LED INDICATOR

TOP APPLICATIONS:  
ROAD CONSTRUCTION, LOADER



LARGE VARIETY OF SIZES AND COLORS

<ul style="list-style-type: none"><li>Reverse diode protection available</li><li>Wide variety of LED colors</li><li>Wire customization available</li></ul>			<ul style="list-style-type: none"><li>Optional sealing up to IP67</li><li>Many different panel cut-out sizes</li></ul>			<ul style="list-style-type: none"><li>Available with custom and secret until lit legends</li></ul>			
SERIES	PANEL CUT-OUT	MAXIMUM RATINGS	BEZEL STYLES	BEZEL FINISHES	TERMINAL OPTIONS			TYPE OF ILLUMINATION	LED COLORS
					Fastons	Pins	Wire		
Q	Ø6, 8, 10, 12, 14, 16, 19, 22, 25, 30	2VDC -220VAC	Prominent, recessed & flushed	Bright, satin & black	X	X	X	Fixed light, bi-color, RGB, night vision	Suitable for in cab use and outside use which are daylight viewable

KP6 CAN BUS KEYBOARD

RUBBER KEYPADS

TOP APPLICATIONS:  
LOADER, GRADER, EXCAVATOR



STANDARD SOLUTION FOR MULTIPLE BUTTON APPLICATIONS

<ul style="list-style-type: none"> <li>CAN bus or direct wiring output options</li> <li>CAN solution e-marking qualified (EMI, EMC)</li> <li>Backlit and quick front assembly</li> </ul>			<ul style="list-style-type: none"> <li>Bargraph &amp; indicators available</li> <li>Braille usage and glove usage compatible</li> </ul>		
SERIES	SEALING	OPERATING VOLTAGE	COMMUNICATION PROTOCOL	MOUNTING	EXTRA FEATURES
KP6	up to IP67	12 to 24 VDC	Can J1939 or discrete	Snap-in front mounting	Special illumination / phantom marking / special key colors



# REMOTE CONTROL

ENHANCED KEYPADS

TOP APPLICATIONS:  
ALL CONSTRUCTION EQUIPMENTS AND VEHICLES



# CUSTOM KEYBOARD

METAL AND RUBBER KEYBOARDS

TOP APPLICATIONS:  
ALL CONSTRUCTION EQUIPMENTS AND VEHICLES



## ENHANCED MEMBRANE KEYPADS

<ul style="list-style-type: none"> <li>• Plug and play product</li> <li>• Backlighting</li> </ul>	<ul style="list-style-type: none"> <li>• IP67/IP69K sealing</li> <li>• Up to SIL2/PId capable</li> </ul>
CUSTOMISATION OPTIONS	
Based on 9 mastered technologies (membrane, elastomeric...) and high performance APEM components	
Design for outdoor and dusty environment	
APEM Available Communication Protocols as a standard : CAN bus, RS485/422, USB	
Consideration of ergonomic constraints in the design for user-friendly operation	
Developed to withstand falls	

## COMPLETE SOLUTION

<ul style="list-style-type: none"> <li>• Rear or front panel mounting</li> <li>• Backlighting</li> </ul>	<ul style="list-style-type: none"> <li>• IP67/IP69K sealing</li> <li>• Up to SIL2/PId capable</li> </ul>
CUSTOMISATION OPTIONS	
Integration possible of all APEM products	
Design for outdoor and dusty environment	
APEM Available Communication Protocols as a standard : CAN bus, RS485/422, USB	





# APEM

an IDEC company

## AT A GLANCE



**70** YEARS OF TRUST BUILT ON QUALITY



**1,400** EMPLOYEES WORLDWIDE



**50,000 +** PART NUMBERS

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