



AGRICULTURAL MACHINERY

APEM IN AGRICULTURAL MACHINERY

APEM is a leading manufacturer of high-reliability Human Machine Interface (HMI) products with more than 20 years' experience in the agricultural industry.

With vertically integrated manufacturing, APEM offers its agricultural customers uncompromised reliability through its custom product development, manufacturing excellence and out-standing service.

APEM offers a broad range of HMI components designed for the agricultural market, including toggles, rockers and pushbutton switches, LED indicators, paddle controls as well as switch panels and joysticks.



UNPARALLELED EXPERIENCE
AGILITY TO SUPPORT
CUSTOM DESIGNS
FOR YOUR APPLICATION



A BROAD RANGE OF PRODUCTS AND SOLUTIONS

APEM OFFERS

1 STANDARD PRODUCTS

PANEL SWITCHES



PCB SWITCHES



LED INDICATORS



JOYSTICKS



PANEL SOLUTIONS



2 CUSTOMIZED PRODUCTS

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

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



3 CAPABILITY TO BUILD PANEL SOLUTIONS



With quality components and 9 keyboard technologies available, APEM can provide sub-assemblies, design and build a remote control or a complete HMI precisely to your need.

APEM can provide you with full service capabilities, including studies and testing. With control of all stages of production, you can be sure that the solution will perform to mechanical, electrical, environmental and EMC/EMI standards. Our internal electronic teams manage the integration of communication protocols as well as protection filters and power supplies.

**YOU HAVE
SPECIFIC
NEEDS,
WE HAVE
DEDICATED
SOLUTIONS**



PREVENT ACCIDENTS DUE TO UNINTENDED OPERATION
Choose a rocker with a reliable interlocking mechanism.

KL SERIES

The KL Series features a small switch at the top that, once pressed, will prevent the switch from being turned on unless it is pressed down.



IMPROVE ERGONOMICS
Integrate a mini joystick on your main joystick.

TS SERIES

This proportional two axis joystick is similar in size and operation to «gamepad» controls, but in a rugged industrial package.



OPTIMIZED SPECIFIC FUNCTIONS ON ONE HANDGRIP
Differentiate your HMI with a custom joystick using qualified and field proven components.

XD RT HANDLE

A multi-axis Hand Grip joystick with ergonomics designed specifically by APEM for demanding vehicle applications.



NAVIGATE THE TOUCH PANEL WHILE KEEPING YOUR HAND ON THE JOYSTICK
Integrate a navigation joystick on you handgrip.

NV SERIES

Contrary to most navigators currently on the market, the NV series provides enhanced tactile feedback in 4 directions plus pushbutton. This results in improved haptics and extremely precise control.



THE XD SERIES RT HANDLE

CONFIGURE YOUR JOYSTICK WITH QUALIFIED OFF-THE-SHELF HMI COMPONENTS

The following HMI components can be used on the face and rear plates of our handles:



NV SERIES

- 4 and 5 way operation
- Momentary actuation with tactile feedback
- IP67 panel sealed



FNR SERIES

- Ideal for forward-neutral-reverse functions
- Momentary and latching operations
- Panel sealing to IP69K



IX SERIES

- Momentary tactile operation
- Elastomer boot provides IP67 panel sealing
- LED backlighting options



HR SERIES

- Hall effect roller
- Spring centering or friction hold
- IP67 sealed electronics and panel sealed options

XD SERIES

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

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 agriculture market and its environment during the last decades, APEM provides the most suitable solution to its customers.

TECHNOLOGIES MASTERED BY APEM AND ADAPTED TO AGRICULTURAL EQUIPMENTS:

Membranes

Elastomeric*

MEC PCB switch panel*

Membranes on PCB*

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



MULTIPLE SWITCH TECHNOLOGIES

- ELASTOMERIC MEMBRANE
- PROPORTIONAL ROLLER & ROCKER
- PROPORTIONAL THUMBSTICK
- ELECTRO-MECHANICAL SWITCHES

ROBUST ERGONOMIC DESIGN

DEDICATED COMPONENT
DEVELOPMENT

CUSTOM INTEGRATED
CAN PROTOCOL

APEM develops complete interface solutions

combining components (switches, keypads, indicators, joysticks), with 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

APEM OFFERS THE WIDEST RANGE OF HMI COMPONENTS & SOLUTIONS WITH OVER 125,000 STANDARD PART NUMBERS INCLUDING SWITCHES, JOYSTICKS, SWITCH PANELS, INDICATORS.

CONTENT

PANEL SWITCHES

Sealed & customizable rockers switches



FNR SERIES 9
EFFORTLESS FORWARD/REVERSE CONTROL



ROCKERMEC SERIES 10
COMPACT ROCKER SWITCH



KL SERIES 11
STRONG LOCKING MECHANISM



KR SERIES 12
SEALED, CUSTOMIZABLE ROCKER



KH SERIES 13
PROTECTED AGAINST ACCIDENTAL ACTUATION

Highly versatile pushbuttons



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FNR SERIES

FNR ROCKER SWITCH

TOP APPLICATIONS: IN-CAB CONTROLS, TRACTORS, COMBINES, SPECIALTY HARVESTERS, SELF-PROPELLED SPRAYERS



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	1 NO/NC	1A /24V	Ø20 mm (787 in)	Flying leads, solder lugs	Panel	IP67

ROCKERMEC / 10A

SEALED PCB ROCKER SWITCH

TOP APPLICATIONS: IN-CAB CONTROLS, TRACTORS, COMBINES, SPECIALTY HARVESTERS, SELF-PROPELLED SPRAYERS



COMPACT ROCKER SWITCH

- 2 or 3 positions, momentary
- Sealed up to IP67
- Illumination of marking from PCB
- Customization possibilities
- Plug & play PCB module available

SERIES	POLES	MAXIMUM RATINGS	MECHANICAL LIFE	MOUNTING OPTIONS	SEALING	ILLUMINATION
10A	1 NO or 1 NC/NO	50mA - 24DVC	500.000 operations	Through hole or SMT mounting	IP67	Single/bi-color/RGB

KL SERIES

LOCKING POWER ROCKER SWITCH

TOP APPLICATIONS: PTO ENGAGEMENT & OTHER CRITICAL FUNCTIONALITIES IN TRACTORS, COMBINES, SPECIALTY HARVESTERS & SELF-PROPELLED SPRAYERS



STRONG LOCKING MECHANISM

- Field proven reliability
- Solid construction
- Elastomer membrane option
- Intuitive ergonomics
- Easy-operation one hand activation

SERIES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	MOUNTING OPTIONS	TERMINAL OPTIONS			SEALING	ILLUMINATION
					Solder lugs	Quick connect	Connector		
KL	1,2	10A 24VDC	36.8 x 21.08 mm	Panel	X	X	X	IP69K	X

KR SERIES

POWER ROCKER SWITCH

TOP APPLICATIONS: IN-CAB CONTROLS, TRACTORS, COMBINES, SPECIALTY HARVESTERS, SELF-PROPELLED SPRAYERS



SEALED, CUSTOMIZABLE ROCKER

- Large variety of colors & laser etched symbols
- Infinite number of options available for cost effective customization solutions
- Connectors and mounting panel accessories available
- Illuminated and non-illuminated

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	IP69K	X

KH SERIES

POWER ROCKER SWITCH WITH PROTECTION GUARD

TOP APPLICATIONS: IN-CAB CONTROLS, TRACTORS, COMBINES, SPECIALTY HARVESTERS, SELF-PROPELLED SPRAYERS



PROTECTED AGAINST ACCIDENTAL ACTUATION

- Available on 2 or 4 sides
- Customized laser etched legends
- Illuminated versions
- Sealed up to IP68/IP69K

SERIES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	MOUNTING OPTIONS	TERMINAL OPTIONS			SEALING	ILLUMINATION
					Solder lugs	Quick connect	Screw		
KH	1,2	10 A 24 VDC	36.8 x 21.08 mm	Panel	X	X	X	IP69K	X

IX SERIES

COMPACT PUSHBUTTON SWITCH

TOP APPLICATIONS: IN-CAB CONTROLS, TRACTORS, COMBINES, SPECIALTY HARVESTERS, SELF-PROPELLED SPRAYERS



THE NEXT STANDARD

- Compact
- Available with backlit marking
- Dustproof. Membrane on top with no gap between actuator and panel
- Frost, sand and hydrocarbon resistant
- Flush on panel
- Sealed up to IP67/IP69K
- SIL2/PLd capable

SERIES	POLES	MAXIMUM RATINGS	BUSHIND DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING
IX	2	50 mA - 24 VDC	Ø 12 mm (.472 in)	Solder lugs	Panel	IP67/IP69K

IA SERIES

DUSTPROOF PUSHBUTTON SWITCH

TOP APPLICATIONS: IN-CAB CONTROLS, TRACTORS, COMBINES, SPECIALTY HARVESTERS, SELF-PROPELLED SPRAYERS



LOW PROFILE & HIGH RELIABILITY

- Dustproof: Membrane on top with no gap between actuator and panel
- Frost, sand and hydrocarbon resistant
- Flush on panel
- Sealed up to IP67
- SIL2/PLd capable

SERIES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING
IA	1 NO/NC	2A 24VDC	Ø 16 mm (.629 in)	Flying leads	Panel	IP67

IP SERIES

COMPACT PUSHBUTTON SWITCH

TOP APPLICATIONS:
 SPRAYERS, TRACTORS, COMBINES, SPECIALTY HARVESTERS



HIGHLY VERSATILE PUSHBUTTON

- High performance pushbuttons
- Largest selection of color, shapes, terminals, markings, backlighting
- Unified look, differentiated functions, simplified purchasing

SERIES	APPROVALS	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS							MOUNTING OPTIONS	SEALING	ILLUMINATION
					Solder lugs	Quick connect	Screw	PCB	Flying leads	Wire Wrap	Cable			
IP	UL	1	5A 28VDC 4A 12VDC	Ø12 (.472)	X	X		X	X			Panel	IP67	X

FD SERIES

DOUBLE ICON ILLUMINATED PUSHBUTTON SWITCH

TOP APPLICATIONS:
 AGRICULTURAL MACHINERY DASHBOARD (ENGINE START)



DOUBLE ICON ILLUMINATED PUSHBUTTON

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

SERIES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS							MOUNTING OPTIONS	SEALING	ILLUMINATION
				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

AV30 START STOP

METAL PUSHBUTTON

TOP APPLICATIONS:
 AGRICULTURAL MACHINERY DASHBOARD (ENGINE START)



RUGGED METALIC 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

FP SERIES

FULLY ILLUMINATED PUSHBUTTON SWITCH

TOP APPLICATIONS: IN-CAB CONTROL PANELS, TRACTORS, COMBINES, SPECIALTY HARVESTERS, SELF-PROPELLED SPRAYERS



DESIGNED TO ATTRACT ATTENTION

- Full actuator or symbol illumination
- 24/26/30mm diameters
- Sealed up to IP69K
- Threaded or snap-in versions
- Fully customizable

SERIES	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS							MOUNTING OPTIONS	SEALING	ILLUMINATION	
				Solder lugs	Quick connect	Screw	PCB	Flying leads	Wire Wrap	Cable				
FP	1,2	4A 12VDC 200mA 12VDC	Ø24 (.944) Ø26 (1.024) Ø30 (1.18)	X					X		X	Panel, Snap-in or threaded bushing	Up to IP69K	X

EMERGENCY STOPS

ROBUST EMERGENCY STOP

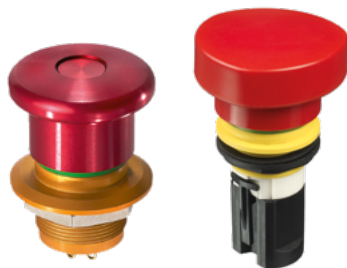
TOP APPLICATIONS: IN-CAB CONTROLS, TRACTORS, COMBINES, SPECIALTY HARVESTERS, SELF-PROPELLED SPRAYERS



"SAFE BREAK ACTION" TECHNOLOGY

- Exclusive safety technology ensuring that the machinery is stopped if actuator is broken
- Sealed up to IP67
- Compact behind panel
- Available with illumination
- Twist or pull to release

SERIES	SAFE BREAK TECHNOLOGY	PANEL CUT OUT	OPERATOR SIZES	NUMBER OF CONTACTS	TERMINAL CONNECTION	OPERATION	ILLUMINATION
XA	X	16 mm	Ø29 mm (1.141 in) Ø40 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	Ø38 mm (1.496 in) Ø40 mm (1.574 in) Ø60 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



COMPACT SAFETY SWITCHES

- Sealed up to IP65, IP67 & IP69K
- Compact body
- Complies with EN60947-5-1
- Impact resistant to IK10

SERIES	APPROVALS	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS			MOUNTING OPTIONS	SEALING
					Solder lugs	Connector	PCB		
ES	EN60947-5-1	2, 3	1A 24VDC	Ø22 (0.877) Ø28 (1.102)	X		X	Panel	IP65, IP67 & IP69K
EC	EN60947-5-1 EN60947-5-5	2	1.5A 24VDC	Ø22 (0.877)	X	X	X	Panel	IP65

5000 SERIES

TOGGLE SWITCH

TOP APPLICATIONS:
 NAVIGATION & CONTROL SYSTEMS FOR PRECISION FARMING APPLICATIONS



HIGH PERFORMANCE MINIATURE TOGGLE

- High performance, sturdy construction
- Widest variety of actuators, contact materials, functions, poles, terminals, bushings, finishes & sealings
- Visual versatility: sealing boots in 6 different colors
- Easily adaptable to final application
- Available with low level contact

SERIES	APPROVALS	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS							MOUNTING OPTIONS	SEALING	ILLUMINATION	
					Solder lugs	Quick connect	Screw	PCB	Flying leads	Wire wrap	Cable				
5000	VDE-UL-CSA-CECC	1,2,3,4	3A 250VAC 4A 30VDC	Ø6 (.236) Ø6,35 (1/4) Ø11,9 (15/32)	X	X		X			X		Panel, Vertical - Through hole, Horizontal- Through hole, Vert. right angle- Through hole	Optional	

600 & 600NH SERIES

POWER TOGGLE SWITCH

TOP APPLICATIONS: TRACTOR ATTACHMENTS & IMPLEMENTS, SPRAYERS & HARVESTING EQUIPMENT LIVESTOCK HOUSING, GREENHOUSES, CONTROL UNITS



SUPERIOR QUALITY TOGGLE SWITCH

- Superior reliability and longer life
- Great sealing
- Visual versatility
- Sealing boots in a wide range of colors and lever choices including paddle levers for at-a-glance directional control

SERIES	APPROVALS	POLES	MAXIMUM RATINGS	BUSHING DIMENSIONS	TERMINAL OPTIONS							MOUNTING OPTIONS	SEALING	ILLUMINATION
					Solder lugs	Quick connect	Screw	PCB	Flying leads	Wire wrap	Cable			
600H	NF-VDE-UL-CSA	1,2,3	15A 250VAC 10A 24VDC	Ø12 (.472)	x	x	x					Panel	Optional	
600NH	NF-VDE-UL-CSA	1,2,3	15A 250VAC 10A 24VDC	Ø12 (.472)	x	x	x					Panel	No	

MSG & CSG SERIES

SWITCH GUARDS

TOP APPLICATIONS: IN-CAB CONTROLS, TRACTORS, COMBINES, SPECIALTY HARVESTERS, SELF-PROPELLED SPRAYERS



DESIGNED TO PROTECT

- High robustness with no risk of jamming
- Variety of locking options (MSG)
- Hydrocarbon/acid/chemical resistant (MSG)
- Easy marking on top (MSG)
- Complements APEM's toggle range
- Anti-tamper wire seal hole as standard

SERIES	CAP MATERIAL	SUPPORT PLATE	OPERATING TEMPERATURE	MECHANICAL LIFE	SWITCHES	LEVER LENGTH
CSG	Thermoplastic	Thermoplastic	-20°C to +55°C		Ø11.9mm, Ø12mm threaded bushing	17.5mm outside bushing
MSG	Thermoset	Matte black stainless steel	-40°C to +85°C	20,000 cycles	Ø11.9mm, Ø12mm threaded bushing	17.5mm outside bushing

SEALING BOOT SERIES

SEALING BOOTS

TOP APPLICATIONS: IN CAB & FENDER IN AGRICULTURAL EQUIPMENT, REMOTE CONTROLS, TRACTORS, COMBINES, SPECIALTY HARVESTERS, SELF-PROPELLED SPRAYERS



PROTECTS AGAINST DUST, SAND AND WATER

- Wide variety of shapes & colors
- Available in silicone and neoprene
- Fast customization to accommodate any actuator length

SERIES	BOOT MATERIAL	NUT MATERIAL	OPERATING TEMPERATURE		TEMPERATURE RANGE		ELASTICITY	MECHANICAL RESISTANCE
					Low	High		
SEALING BOOTS	Neoprene or silicone	Brass, nickel plated, matte black	Silicone	-40°C to +85°C	Best	Best	Best	Good
			Neoprene	-20°C to +50°C	Good	Better	Good	Best

MULTIMEC 5 SERIES

HIGH PERFORMANCE PCB SWITCHES

TOP APPLICATIONS:
TRACTORS, COMBINES, SPECIALTY HARVESTERS



ABSOLUTE RELIABILITY AND FUNCTIONALITY

- 10 million trouble-free actuations
- Superior sealing
- Superior illumination with integrated chip-LEDs
- Large selection of standard caps
- Available in NC/NO

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

PANEL MOUNT LED INDICATORS

TOP APPLICATIONS:
ALL AGRICULTURAL MACHINERY



LARGE VARIETY OF SIZES AND COLORS

- Reverse diode protection available
- Wide variety of LED colors
- Wire customization available
- Optional sealing up to IP67
- Many different panel cut-out sizes
- Available with custom and secret until lit legends

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

XD SERIES

HALL EFFECT ROBUST JOYSTICK

TOP APPLICATIONS:
 SPRAYERS, TRACTORS, COMBINES, SPECIALTY HARVESTER



DESIGNED FOR DEMANDING APPLICATIONS

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

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

CJ SERIES

MULTIFUNCTION JOYSTICK

TOP APPLICATIONS:
TRACTORS, COMBINES, SPECIALTY HARVESTERS



AVAILABLE WITH ANALOG OUTPUT

- Configurable upper & lower faceplates
- Optional operator presence paddle switch, reducing the risk of inadvertent actuation
- Easy mounting with standard cut-out and hole pattern

SERIES	MECHANICAL LIFECYCLES	AXIS	TECHNOLOGY	OUTPUT OPTIONS						MOUNTING OPTIONS	ABOVE PANEL SEALING
				Single	Dual	Analog	PWM	USB	CAN bus		
CJ	5 million	1, 2	Hall effect	X	X	X		X	X		Up to IP67

3000 SERIES

PREMIUM HALL EFFECT JOYSTICK

TOP APPLICATIONS:

REMOTE CONTROLS, REACH ARM MOWERS, VEGETATION CONTROL MACHINERY



COMPACT, PRECISION HALL EFFECT JOYSTICK

- Precision contactless Hall effect technology
- Compact for low profile applications
- Robust with over 10 million mechanical lifecycles

SERIES	MECHANICAL LIFECYCLES	AXIS	TECHNOLOGY	OUTPUT 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

HF SERIES

SMALL HALL EFFECT JOYSTICK

TOP APPLICATIONS:
TRACTORS, COMBINES, SPECIALTY HARVESTERS



AVAILABLE WITH CAN BUS

- 5 million lifecycles
- Many outputs available, including CAN bus J1939
- Available with 1, 2 or 3 axis
- Very compact
- SIL2 / PId capable
- Up to IP67 above panel sealing

SERIES	MECHANICAL LIFECYCLES	AXIS	TECHNOLOGY	OUTPUT OPTIONS						MOUNTING OPTIONS	SEALING
				Single	Dual	Analog	PWM	USB	CAN bus		
HF	5 million	1, 2, 3	Hall effect	X	X	X		X	X	Drop-in or rear mounting	IP67

1000 / 1000 HE SERIES

COMPACT SWITCH JOYSTICKS

TOP APPLICATIONS: REMOTE CONTROLS FOR AGRICULTURAL EQUIPMENT, SELF PROPELLED SPECIALTY TRACTORS MOWERS, SPRAYERS, HYDRAULIC VALVE CONTROLS, MENU SELECTION FOR SCREEN NAVIGATION



COMPACT SWITCH JOYSTICK

- Configurable with single or double pole switching
- Versatile, compact and cost-effective
- Large selection of robust, ergonomic handles

SERIES	MECHANICAL LIFECYCLES	AXIS	TECHNOLOGY	OUTPUT OPTIONS						MOUNTING OPTIONS	SEALING
				Single	Dual	Analog	PWM	USB	CAN bus		
1000	5 million (HE version: 1 million)	1, 2,	Switching (1, 2 poles)	X						22mm bushing, 4 point screw	Up to IP67

BHN/BL SERIES

PROPORTIONAL PADDLES

TOP APPLICATIONS:
IN-CAB CONTROLS, TRACTORS, COMBINES, ARMRESTS & DASHBOARDS



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

TS SERIES

PROPORTIONAL HALL EFFECT THUMBSTICK

TOP APPLICATIONS: TRACTORS, COMBINES, SPECIALTY HARVESTERS, REMOTE CONTROLS, ARMRESTS & DASHBOARDS



PRECISION FINGERTIP CONTROL

- Illuminated version available
- Ergonomically designed for repetitive operation over extended periods
- Highly reliable: up to IP67 and IP69K sealing
- Easy integration with rear or drop-in mounting & compact size
- Available with multiple handle options and material

SERIES	MECHANICAL LIFECYCLES	AXIS	TECHNOLOGY	OUTPUT 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:
TRACTORS, COMBINES, SPECIALTY HARVESTERS



IDEAL AS DISPLAY CONTROLLER

- Compact momentary micro switching thumbstick
- Available with “push to validate” option, ideal for navigation in display menu
- Enhanced tactile feedback
- Easy integration in joystick handle
- Sealed up to IP69K

SERIES	MECHANICAL LIFECYCLES	AXIS	BUSHING DIMENSIONS	TECHNOLOGY	TERMINAL OPTIONS	MOUNTING OPTIONS	SEALING
NV	1 million	1,2	Ø16.2 mm (.637 in)	Switching	Wire leads or connector	Panel	IP69K

HR & CW SERIES

PROPORTIONAL THUMBWHEELS

TOP APPLICATIONS: TRACTORS, COMBINES, SPECIALTY HARVESTERS, REMOTE CONTROLS, ARMRESTS & DASHBOARDS



ROLLER AVAILABLE WITH MANY OPTIONS

- Backlighting & detent options available (up to 11)
- Self centering spring return mechanism
- Non-contacting Hall effect technology
- Choice of 4 actuator styles

SERIES	MECHANICAL LIFECYCLES	AXIS	TECHNOLOGY	OUTPUT OPTION						MOUNTING OPTIONS	SEALING
				Single	Dual	Analog	PWM	USB	CAN bus		
HR	5 million	1	Hall effect	X	X	X				Rear mounting	IP68



MINIATURE ROLLER

- Up to 3 million lifecycles
- Snap-in mounting
- Custom actuator on request
- Spring to center

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	-

ELASTOMERIC KEYPAD

RUBBER KEYPAD

TOP APPLICATIONS: IN-CAB CONTROLS, TRACTORS, COMBINES, SPECIALTY HARVESTERS, SELF-PROPELLED SPRAYERS



STANDARD SOLUTION FOR MULTIPLE BUTTON APPLICATIONS

- CAN bus or direct wiring output options
- CAN solution e-marking qualified (EMI, EMC)
- Backlit and quick front assembly
- Bargraph & indicators available
- Braille usage and glove usage compatible

6 BUTTON KEYPADS

Sealed up to IP67

Can J1939 or discrete

12 to 24 VDC operating voltage

Easy front mounting

ENHANCED MEMBRANE KEYPAD

MEMBRANE KEYPAD

TOP APPLICATIONS: IN-CAB CONTROLS, TRACTORS, COMBINES,
SPECIALTY HARVESTERS, SELF-PROPELLED SPRAYERS



SEALED AND SHOCK RESISTANT KEYPAD

- Sealed up to IP69K
- Impact resistant IK10
- Fertilizer and hydrocarbon resistant
- UV resistant

ENHANCED MEMBRANE KEYPADS

Panel mounted or remote control formats available

Standard 2 or 3 buttons available

Custom graphic marking

STAINLESS STEEL KEYPAD

STAINLESS STEEL KEYPAD

TOP APPLICATIONS: SCREEN NAVIGATION IN SELF PROPELLED VEHICLES AND FOR ATTACHMENTS, REMOTE CONTROLS



RUGGED, CUSTOMIZABLE BACKLIT KEYPAD

- Outdoor use (greenhouse environment resistant)
- Customizable selection of key legends and symbols
- Single or multi color options available
- Fully customizable keyboard size and button position/ configuration
- Current switching up to 150 mA

STAINLESS STEEL KEYPADS

Sealed up to IP67 & impact resistant up to IK09

Diameter 17 mm and 20 mm pushbuttons available

Backlighting and LED indicators windows available

High resistance to agricultural chemicals (fertilizer, gasoline, oil, ...)

Button legends resistant to heavy extended use

Thin design to 7,1 mm below panel



APEM

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+ 50,000 PART NUMBERS

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