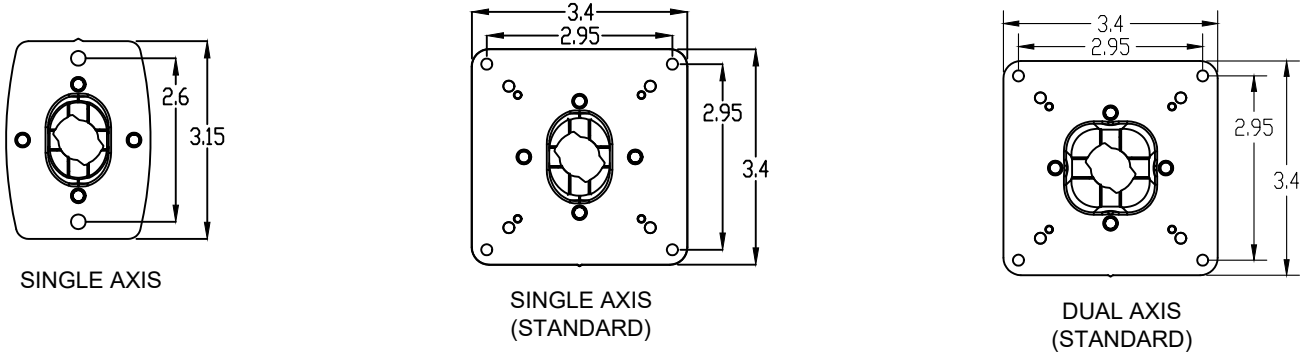


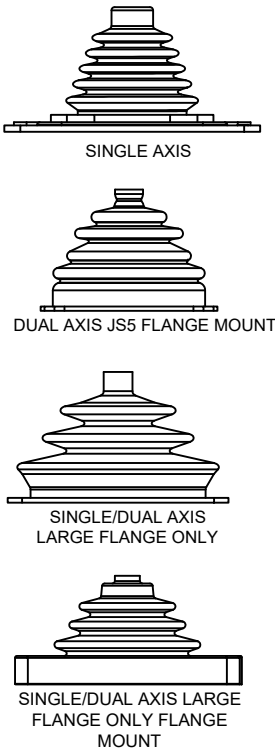
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REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	E	UPDATED PER ECN#8785	NM*1-7-2025	

MOUNTING OPTIONS



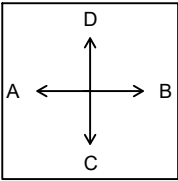
BOOT OPTIONS



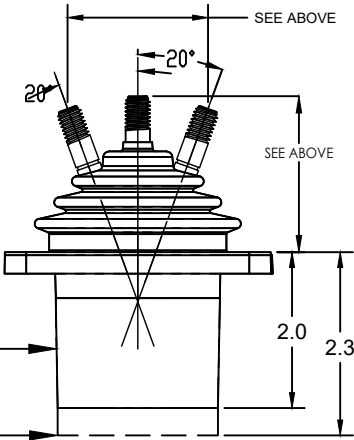
MECHANICAL OPTIONS

8mm HANDLE SHAFT DIAMETER Ø			
SHAFT LENGTH	HANDLE HEIGHT	HANDLE TRAVEL	OPTIONS
70mm	2.05"	1.02" EACH DIRECTION	OPTIONAL
80mm	2.44"	1.20" EACH DIRECTION	STANDARD
100mm	3.23"	1.26" EACH DIRECTION	OPTIONAL

Handle Travel Direction



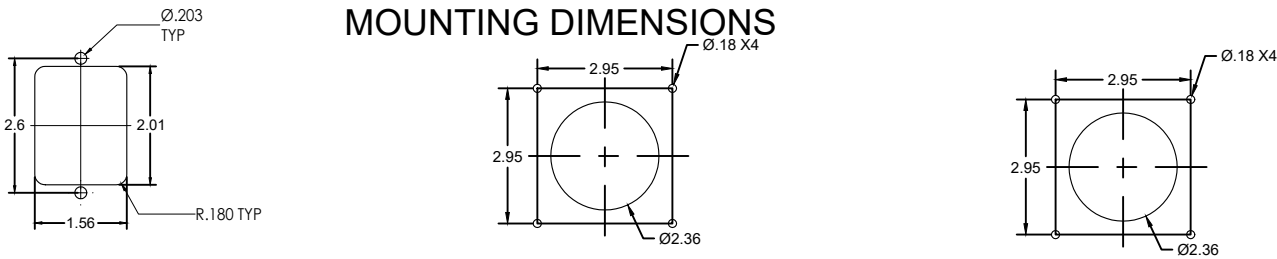
HANDLE OPERATION	
A-B AXIS	C-D AXIS
SPRING RETURN	
FOR HANDLE OPTIONS SEE SHEET 2	



STANDARD ENCLOSURE

ENCLOSURE + PCB MOUNT CONNECTOR (OPTIONAL)

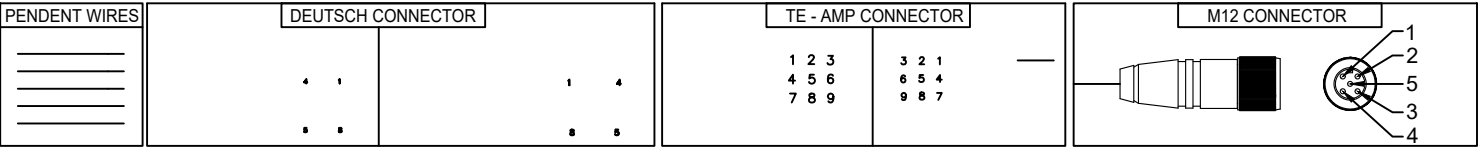
MOUNTING DIMENSIONS



ELECTRICAL CONFIGURATIONS

Power Supply Range	Output Type	#Digital Inputs	#Analog I/O	Analog Output Range	Absolute/Ratiometric Output	Notes
4.5V - 5.5V	Voltage Output	0	2 OUTPUTS	0V to Vbat-0.2V*	Ratiometric Only	*Actual output values set by factory calibration software. See chart for analog output tolerances.
4V - 7V	Voltage Output	0	1 OUTPUT	0V to Vbat- 0.2V*	Absolute or Ratiometric	*Actual output values and curve shape set by software. See chart for analog output tolerances.
9V-30V	Voltage Output	1	2 OUTPUTS	0V to Vbat- 1V*	Absolute or Ratiometric	*Actual output values and curve shape set by software. See chart for analog output tolerances.
9V-32V	CANopen (DS401),J1939	3	0 INPUTS	N/A	N/A	—
9V-32V	CANopen (DS401),J1339	5	2 INPUTS	N/A	N/A	* Two analog inputs shared with digital inputs for a total not to exceed five. This is a two board set.
9V-32V	CANopen (DS401),J1939	15	7 INPUTS	N/A	N/A	* PCB is larger than joystick housing.

Wiring Options: 12" pendent wire harness, 12" harness with TE-AMP connector, 12" harness with Deutsch connector or customer specified wiring harness.



Analog Output	Tolerance
0V	(+0.1V),-0V
0V < OUT ≤ 4.5V	+/-0.1V
4.5V < OUT ≤ 6V	+/-0.15V
6V < OUT ≤ 8V	+/-0.2V
8V < OUT ≤ 10V	+/-0.25V
10V < OUT ≤ 12V	+/-0.3V
12V < OUT ≤ 14V	+/-0.35V
14V < OUT ≤ 16V	+/-0.4V
16V < OUT ≤ 18V	+/-0.45V

Specifications:
Operating temperature range:-40 TO +70°C
Mechanical life:1 million cycles
Maximum handle side load: 140 lb

DRAWN BY	ALB	DATE	5/17/16
CHECKED	DDO	DATE	5/17/16
APVD ENG.			
APVD DESN			
APVD SALES			
PROJECTION:			



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PAGE 1 OF 4
HJS7 CATALOG
MECHANICAL AND ELECTRICAL OPTIONS

PART NO.	DWG NO. B30209	REV E
SCALE NTS	SHEET 1 OF 4	SIZE B

RG HANDLE OPTIONS

RG HANDLES ARE AVAILABLE IN FLANGELESS, REDUCED, OR FULL FLANGE CONFIGURATIONS

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REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
-	E	UPDATED PER ECN#8785	NM*1-7-2025	

RG1

(ROCKER SWITCH ON TOP)

FLANGELESS

REDUCED FLANGE

FULL FLANGE

Ø1.4

3.8

4.7

1.6

4.7

Ø2.4

RG0

(BLANK HANDLE)

RG3

(4A DPST P.B ON TOP)

RG2

(10A SPST MOMENTARY P.B ON TOP)

RG8

(5A SPDT MAINTAINED P.B ON TOP)
:NO FLANGELESS:

FLANGELESS

REDUCED FLANGE

FULL FLANGE

Ø1.5

3.6

4.5

Ø1.6

4.5

Ø2.4

RG5

(ROCKER SWITCH ON TOP WITH 10A SPST N.O P.B ON SIDE)

REDUCED FLANGE

FULL FLANGE

4.7

1.8

1.7

RG4(E or B)

(E: 10A SPST ON SIDE)
(B: MICROSWITCH ON SIDE)

RG6(E or B)

(E: 10A SPST P.B ON TOP & 10A SPST P.B ON SIDE)
(B: 10A SPST P.B ON TOP & MICROSWITCH ON SIDE)

RG9E

(5A SPDT MAINTAINED P.B ON TOP & 10A SPST P.B ON SIDE)

Ø1.5

4.0

2.4

RG5(E or B)

E - ROCKER SWITCH ON TOP WITH 10A SPST N.O P.B ON
B - ROCKER SWITCH ON TOP WITH MICROSWITCH ON SIDE

FLANGELESS

REDUCED FLANGE

FULL FLANGE

Ø1.5

4.1

2.4

RG7

(4A SPST P.B ON TOP & 10A SPST P.B ON SIDE)
:NO FLANGELESS:

RG9

(5A SPDT MAINTAINED P.B ON TOP & 10A SPST P.B ON SIDE)
:NO FLANGELESS:

FLANGELESS

REDUCED FLANGE

FULL FLANGE

1.8

1.85

1.85

RG4

(10A SPST ON SIDE)

RG6

(10A SPST P.B ON TOP
10 A SPST P.B ON SIDE)

Ø1.6

Ø2.4

RG10

(10A SPST P.B ON TOP & TWO 10A SPST P.B ON SIDE)
:NO FLANGELESS:

RG11

(TWO 10A SPST P.B ON SIDE)

FLANGELESS

REDUCED FLANGE

FULL FLANGE

1.8

1.8

RG12

(MAINTAINED ROCKER SWITCH ON TOP)

REDUCED FLANGE

FULL FLANGE

4.8

Ø1.6

4.8

Ø2.4

RG13

(2 SPDT SWITCHES ACTUATED BY MAINTAINED ROCKER ON TOP & 10A SPST MOMENTARY SWITCH ON SIDE)

REDUCED FLANGE

FULL FLANGE

4.7

Ø1.6

4.7

Ø2.4

RG16

(ROCKER SWITCH ON TOP & 5A SPDT MAINTAINED P.B ON SIDE)

REDUCED FLANGE

FULL FLANGE

4.7

1.8

1.7

RG17

(ROCKER SWITCH MOUNTED VERTICALLY ON SIDE)

REDUCED FLANGE

FULL FLANGE

Ø1.5

4.5

1.6

Ø1.5

4.5

1.6

RG18

(5A SPDT P.B ON TOP & TWO 5A SPDT P.B ON SIDE)
:NO FLANGELESS:

REDUCED FLANGE

FULL FLANGE

1.8

Ø1.6

1.8

Ø2.4

RG19

(2 SPDT SWITCHES ACTUATED BY MAINTAINED ROCKER ON TOP & 5A SPDT MAINTAINED SWITCH ON SIDE)

REDUCED FLANGE

FULL FLANGE

4.7

Ø1.6

4.7

Ø2.4

MULTIFUNCTION ADAPTER

2.53

2.23

2.0

RG4X (SHEATH OPTIONAL)

1.6

4.8

2.2

RG5X (SHEATH OPTIONAL)

1.6

4.9

2.2

RG20

(5A SPDT MAINTAINED P.B ON TOP & 5A SPDT MAINTAINED P.B ON SIDE)
:NO FLANGELESS:

REDUCED FLANGE

FULL FLANGE

1.85

Ø1.6

1.85

Ø2.4

RG21

(ROCKER SWITCH ON TOP WITH MAINTAINED ON RIGHT SIDE AND SPRING RETURN ON LEFT SIDE)
:NO FLANGELESS:

REDUCED FLANGE

FULL FLANGE

4.7

1.6

4.7

Ø2.4

RG24

(2 SPDT SWITCHES ACTUATED BY MAINTAINED ROCKER ON TOP & 5A SPDT MAINTAINED SWITCH ON SIDE)

REDUCED FLANGE

FULL FLANGE

4.8

Ø1.6

4.8

Ø2.4

RG33

2.89

1.62

1.47

RG34

1.75

4.79

2.08

RG0A

RG4 E&B (A-ADAPTOR)

2.53

6.20

2.53

5.6

RG25

(ROCKER SWITCH MOUNTED ON TOP AND 2 SPST PUSHBUTTON ON SIDE)
CAP NOT TOOLED 3D PRINTED ONLY

5.5

Ø1.6

RG26

(MAINTAINED ROCKER SWITCH ON TOP)

REDUCED FLANGE

FULL FLANGE

4.8

Ø1.6

4.8

Ø2.4

DRAWN BY

ALB

DATE

5/17/16

CHECKED

DDO

5/17/16

APVD ENG.

APVD DESN

APVD SALES

PROJECTION:

1

1

PART NO.

DWG NO.

B30209

REV

E

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PAGE 2 OF 4
HJS7 CATALOG
HANDLE OPTIONS

SHEET

2 OF 4

SIZE

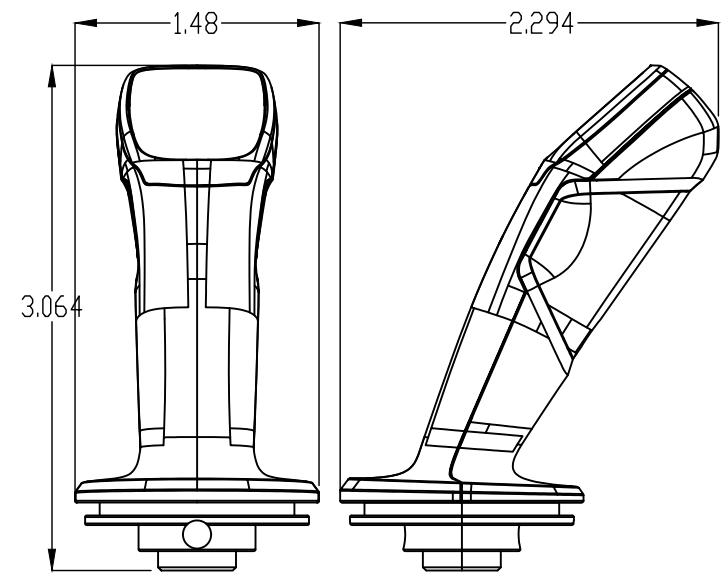
B

MG HANDLE OPTIONS

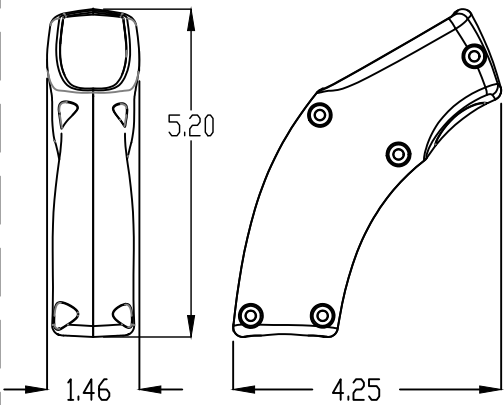
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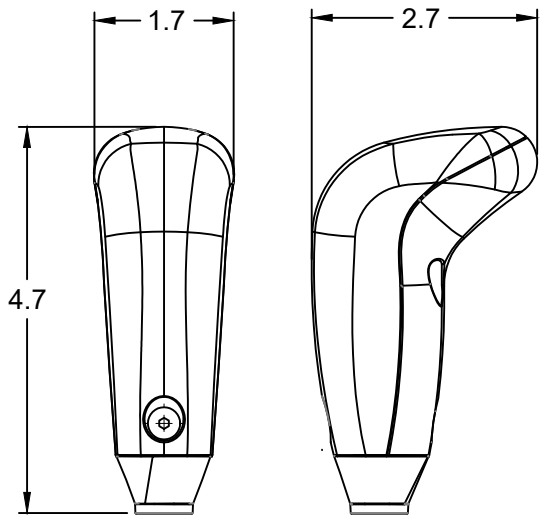
MG35



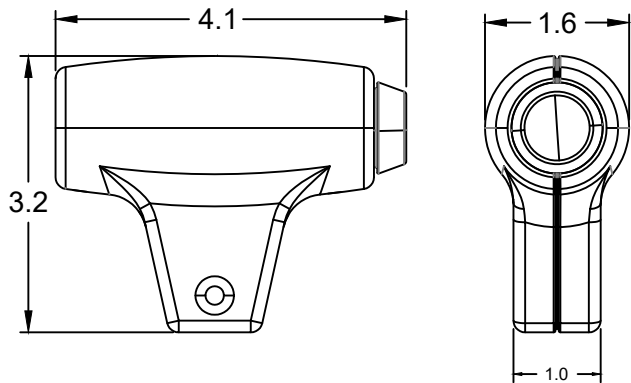
MG15



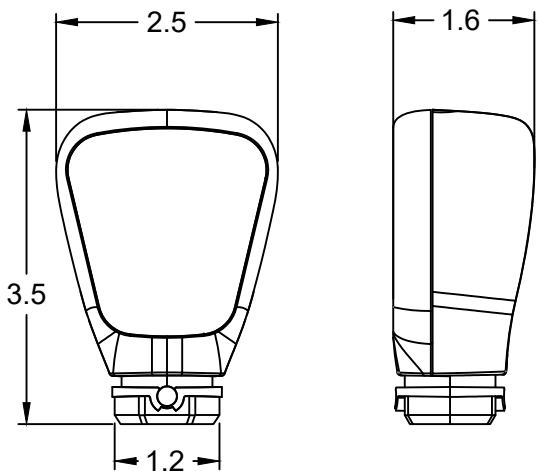
MG28



MG29

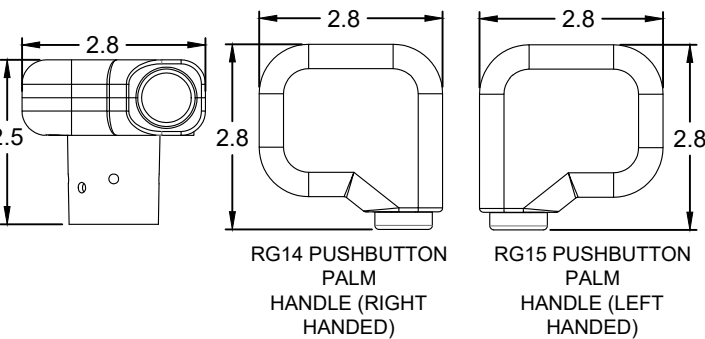


MG32
PALM GRIP



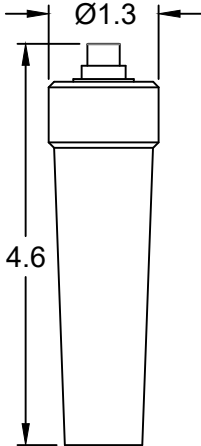
CAP OPTIONS

RG14 & RG15 (PALM
HANDLE)



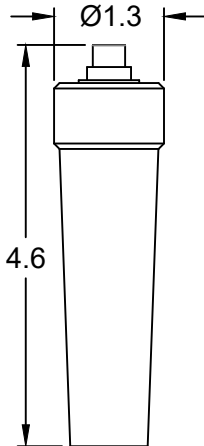
RG22

(SLIMLINE
HANDLE
WITH 5A
SPDT PUSH-
BUTTON
ON TOP)

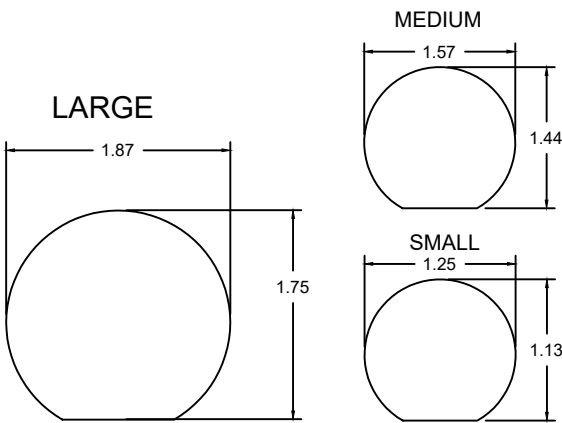


RG23

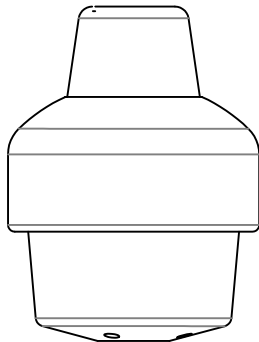
(SLIMLINE
HANDLE
WITH 10A
SPST PUSH-
BUTTON
ON TOP)



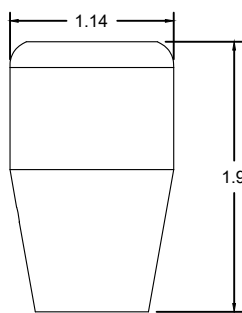
ROUND BALL
(8MM SHAFT ONLY)



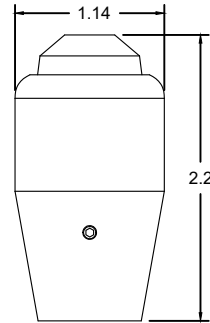
PB CAP

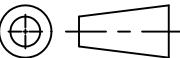


SOLID KNOB (8mm
SHAFT ONLY)



WITH PUSHBUTTON



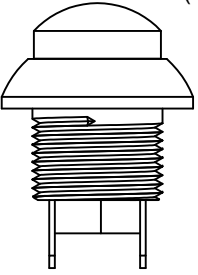
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CHECKED DDO	5/17/16		
APVD ENG.		PAGE 3 OF 4 HJS7 CATALOG HANDLE OPTIONS	
APVD DESN			
APVD SALES			
PROJECTION: 		PART NO.	DWG NO. B30209
		SCALE NTS	SHEET 3 OF 4
			REV E
			SIZE B

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REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	E	UPDATED PER ECN#8785	NM*1-7-2025	

STANDARD COMPONENTS SHOWN. OTHERS AVAILABLE UPON REQUEST

RAISED DOME PUSHBUTTON
(SPST) IP/64



AVAILABLE COLORS

- RED
- BLACK
- YELLOW
- WHITE
- GRAY
- ORANGE
- GREEN
- BLUE

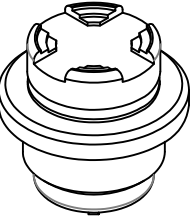
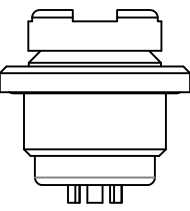
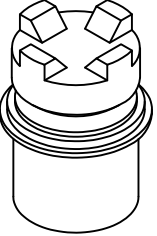
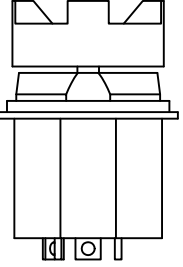
RAISED DOME PUSHBUTTON
(SPST) IP/68



AVAILABLE COLORS

- RED
- BLACK
- YELLOW
- WHITE
- GRAY
- ORANGE
- GREEN
- BLUE

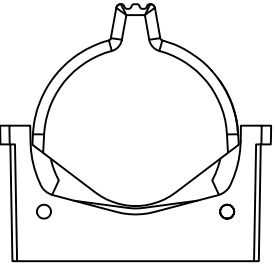
4 WAY ROCKER (ON/OFF DIGITAL)



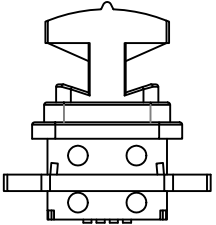
AVAILABLE OPTIONS

- TACTILE
- NO TACTILE

OTHER OPTIONS

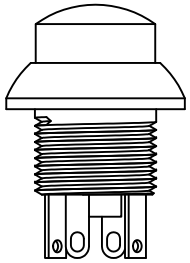


S12 SINGLE PROPORTIONAL



S9 SWITCH
SINGLE
PROPORTIONAL

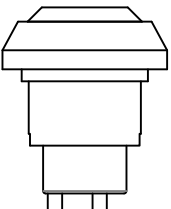
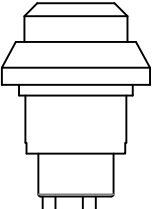
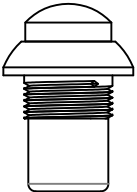
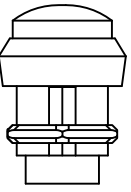
RAISED DOME PUSHBUTTON
(SPDT) IP/64



AVAILABLE COLORS

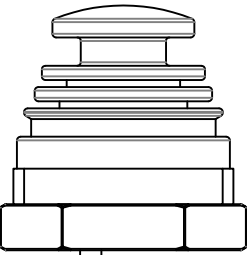
- WHITE
- YELLOW
- GRAY
- ORANGE
- BLUE
- GREEN
- RED
- BLACK

HALL EFFECT (ON/OFF) PUSHBUTTONS

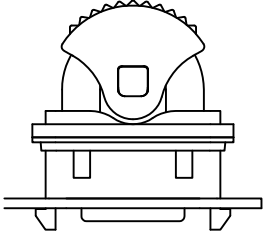


HALL EFFECT TACTILE/NO TACTILE RAISED & FLUSH DOME

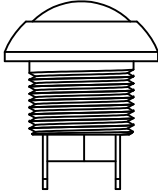
JS20 DUAL PROPORTIONAL



HMS10 SINGLE PROPORTIONAL



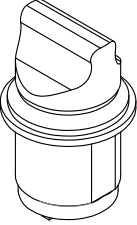
FLUSH DOME PUSHBUTTON
IP/64



AVAILABLE COLORS

- YELLOW
- RED
- BLUE
- GREEN
- BLACK
- ORANGE

ROCKER SWITCHES



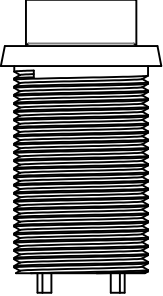
OPTIONS

- MOM-OFF-MOM
- MAINT ON-ON
- MAINT ON-OFF-ON

OPTIONS

- MOM-OFF-MOM
- MAINT ON-ON
- MAINT ON-OFF-ON

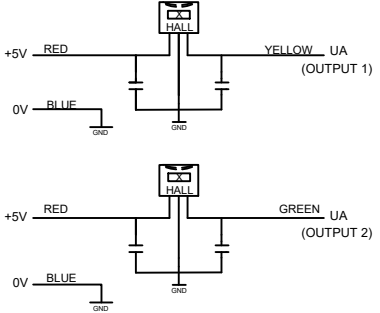
PROPORTIONAL PUSHBUTTON



AVAILABLE COLORS

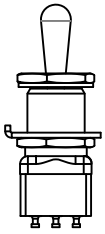
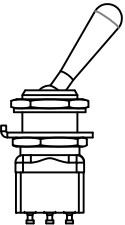
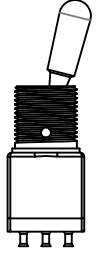
- WHITE
- BLACK

DUAL PROPORTIONAL



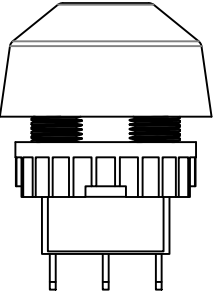
OUTPUT 1: 0.5V - 4.5V
OUTPUT 2: 4.5V - 0.5V

TOGGLE SWITCHES

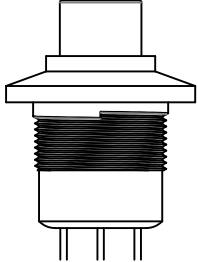


MOM-OFF-MOM MAINT ON-ON MAINT ON-OFF-ON

PUSHBUTTON WITH MINI MICRO



MAINTAINED PUSHBUTTON

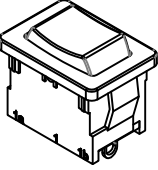


AVAILABLE COLORS

- BLACK
- WHITE

OPTIONS

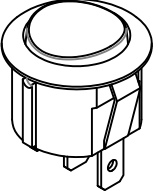
- MOM-MOM
- MAINT-OFF-MAINT



OPTIONS

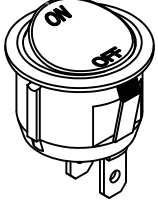
- MOM-OFF-MOM
- MA-OFF-MA

GREEN AND RED LED AVAILABLE



OPTIONS

- ON-OFF



DRAWN BY ALB

CHECKED DDO

APVD ENG.

APVD DESN

APVD SALES

PROJECTION: 

DATE 5/17/16

5/17/16

1



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PAGE 4 OF 4
HJS7 CATALOG
HANDLE COMPONENT OPTIONS

PART NO.

DWG NO. B30209

REV E

SCALE NTS

SHEET 4 OF 4

SIZE B