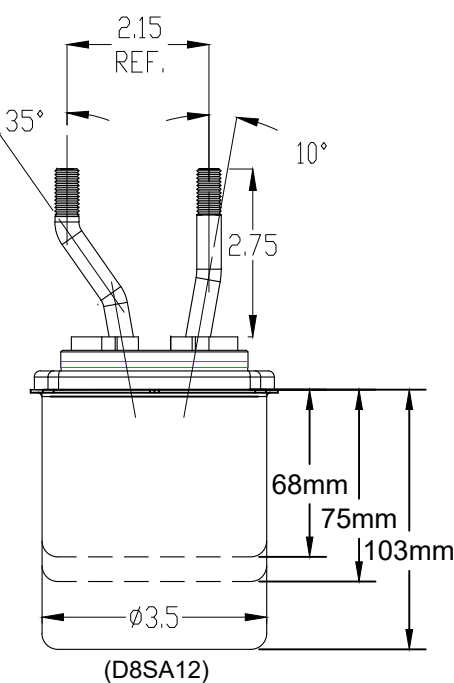


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# MECHANICAL OPTIONS

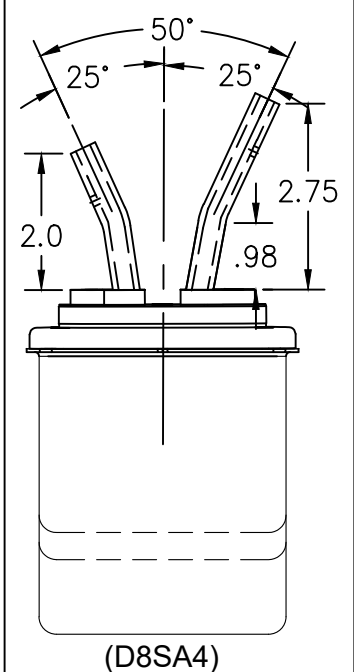
REVISIONS			
ZONE	REV	DESCRIPTION	DATE
	B	UPDATED CATALOG AS PER ECN #503	MAH*5/28/20
APPROVED			

## FRICITION HOLD

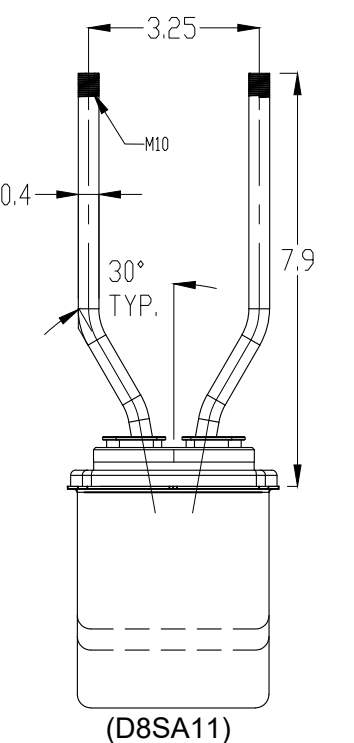


\*HOUSINGS NOT TO SCALE

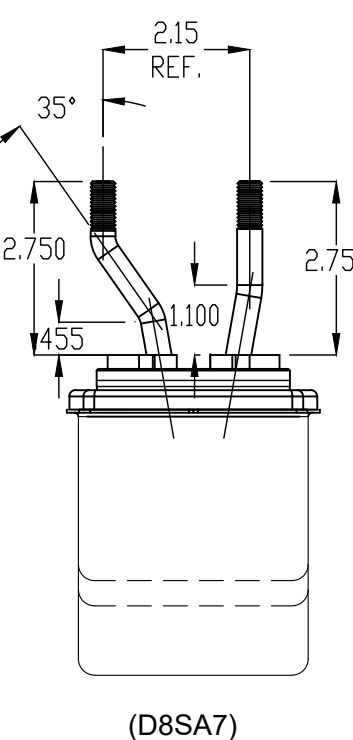
## SPRING RETURN



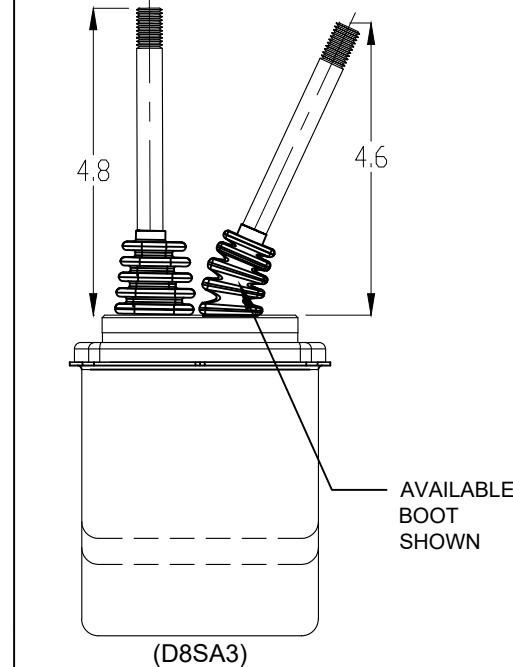
## SPRING RETURN



## SPRING RETURN

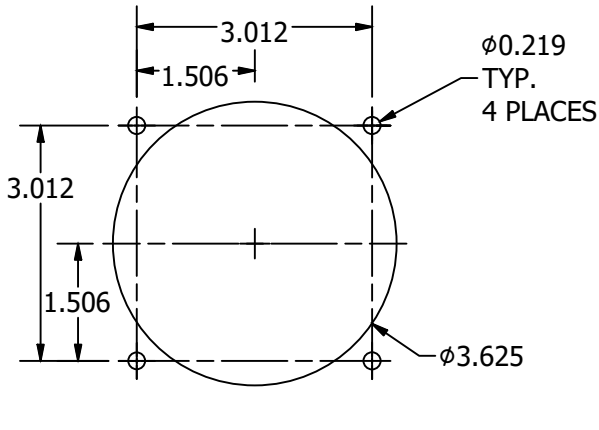


## SPRING RETURN



Specs:  
 IP rating: IP 67  
 Range of travel: ±30°  
 Temperature Rating: -40°C to 60°C  
 Mechanical Life: 8 million cycles  
 EMC tests per EN61000-4.3 and ISO 11452

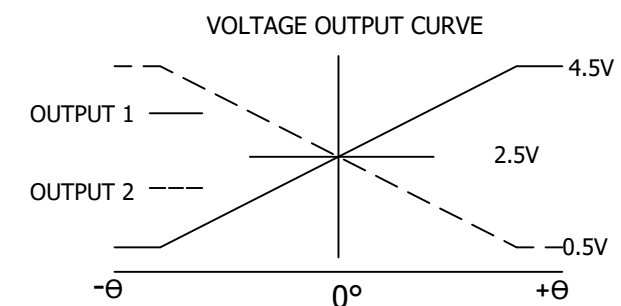
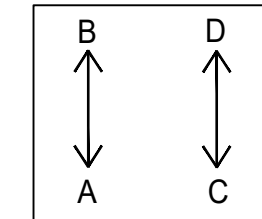
## MOUNTING DIMENSION



## HANDLE OPERATION

A-B AXIS	C-D AXIS
SPRING RETURN	FRICITION HOLD

## HANDLE TRAVEL DIRECTION



## Output options

- Output curve 1 and 2 identical
- Output curve 1 and 2 inverted
- Center and/or end plateau
- -10V to +10V
- 4.5V to .5V to 4.5V
- More available upon request

# ELECTRONIC CONFIGURATIONS

Name	Power Supply Range	Output Type	#Digital Inputs	#Analog Inputs	#Sourcing Digital Outputs	#Sinking Digital Outputs (thumper)	Handle Multiplex (Mux) Interface	Friction Hold Capable	ID Resistor Capable	Notes
OCI-7	9V - 32V	CANopen (DS401), J1939	15*	1*	1	1	No	No	Yes	*Thirteen digital-only inputs plus one that is either a standard active high or active low digital input plus one input that is either digital or analog

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

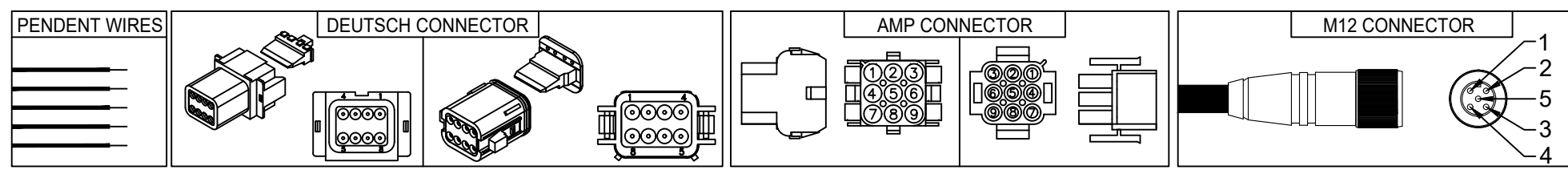
Wiring Options: Pendent wires, Deutsch connectors, AMP connectors or Customer Request.

Power Supply Range	Output Type	#Digital Inputs	#Digital Outputs	#Analog Outputs	Analog Output Range	Ratiometric Output Capable	Friction Hold Capable	Notes
9V - 30V	Voltage Output	2	4	2	0V to Vbat - 1V*	Yes	No	*Actual Output values and curve shape set by software. Analog Output tolerances per chart on right.
9V - 32V	Voltage Output	2	2	2	-10V to +10V*	No	No	
9V - 30V	PLC Current Output	0	4	2	4mA to 20mA*	No	No	

## CAN ECLOSURE OPTIONS

Height	Color
55mm	BLACK or SILVER
68mm	BLACK or SILVER
75mm	BLACK or SILVER
103mm	BLACK or SILVER

Wiring Options: Pendent wires, Deutsch connectors, AMP connectors or Customer Request.



DRAWN BY	MER	DATE	4/6/17
CHECKED	DDO		5/25/17
APVD ENG.			
APVD DESN			
APVD SALES			
PROJECTION:			

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PAGE 1 OF 5  
 HMS8 CATALOG  
 MECHANICAL AND ELECTRICAL OPTIONS

PART NO.	DWG NO. B29830	REV B
SCALE 1:1	SHEET 1 OF 5	SIZE B

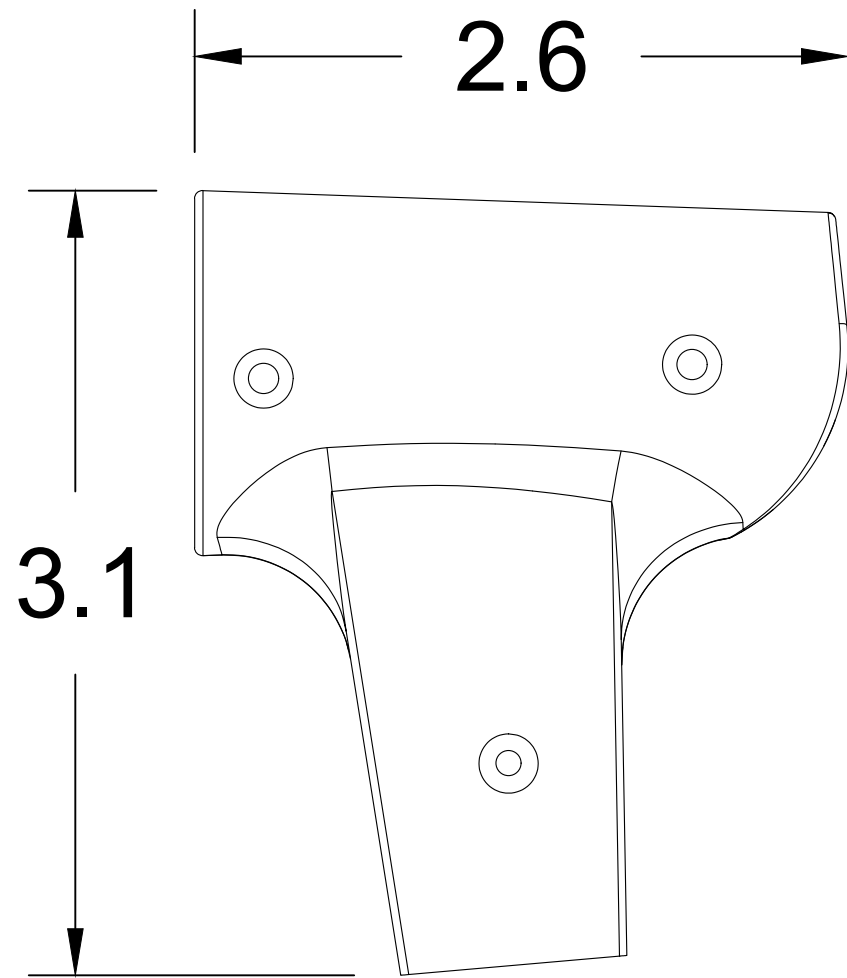
**MG HANDLE OPTIONS**

ALL DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE STATED

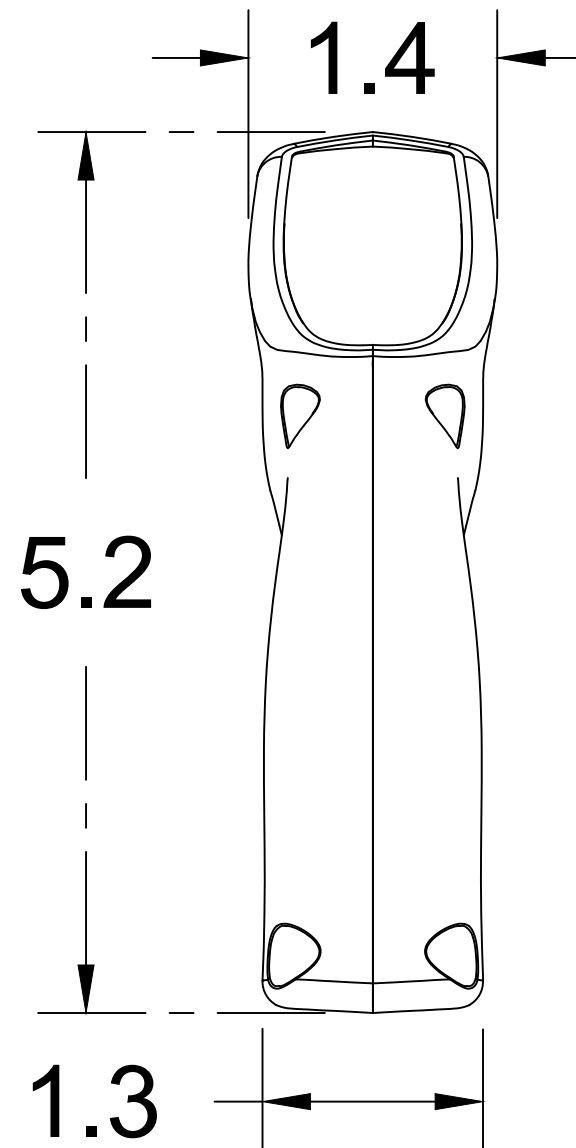
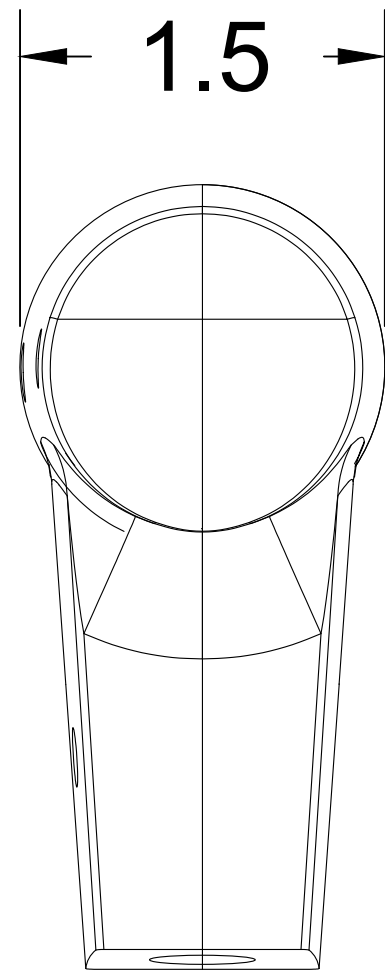
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REVISIONS

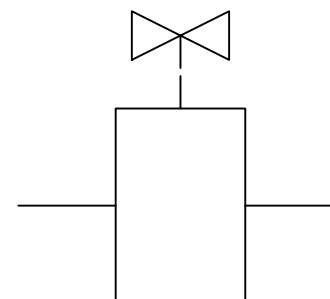
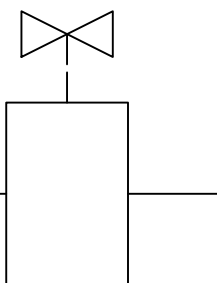
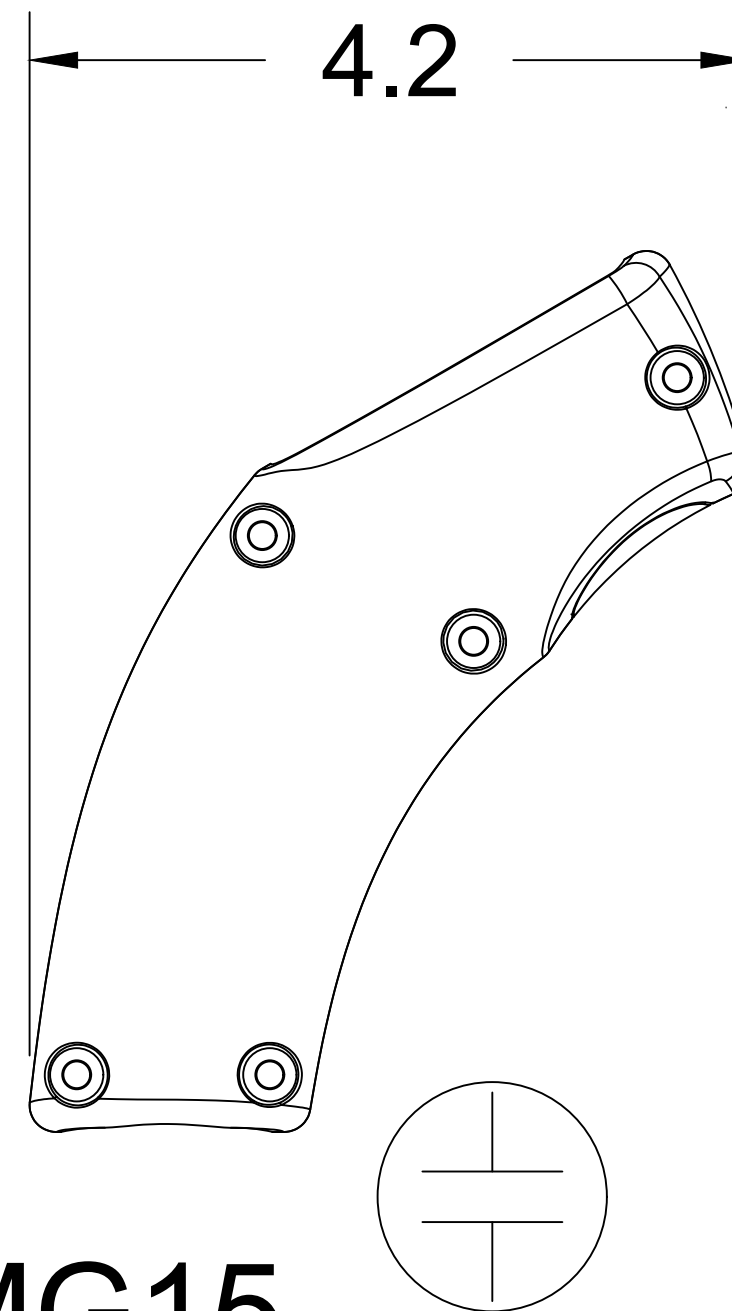
ZONE	REV	DESCRIPTION	DATE	APPROVED
-	D	UPDATED CATALOG AS PER ECN#503	MAH*5/28/20	



**MG4**



**MG15**



DRAWN BY	MER	DATE	4/6/17
CHECKED	DDO		5/25/17
APVD ENG.			
APVD DESN			
APVD SALES			



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PAGE 2 OF 5  
HMS8 CATALOG  
HANDLE OPTIONS

PROJECTION:		1
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PART NO.	DWG NO. B29830	REV D
SCALE NTS	SHEET 2 OF 5	SIZE B

# RG HANDLE OPTIONS FOR 10MM SHAFT ONLY

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## REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
-	B	UPDATED CATALOG AS PER ECN#503	MAH*5/28/20	

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

<p><b>RG1</b> (ROCKER SWITCH ON TOP)</p>	<p><b>RG0</b> (BLANK HANDLE)</p> <p><b>RG2</b> (10A SPST MOMENTARY P.B ON TOP)</p> <p><b>RG3</b> (4A DPST P.B ON TOP)</p> <p><b>RG8</b> (5A SPDT MAINTAINED P.B ON TOP) :NO FLANGELESS:</p>	<p><b>RG5</b> (ROCKER SWITCH ON TOP WITH 10A SPST N.O P.B ON SIDE)</p> <p>REDUCED FLANGE FULL FLANGE</p>	<p><b>RG4 (E or B)</b> (E: 10A SPST ON SIDE) (B: MICROSWITCH ON SIDE)</p> <p><b>RG6 (E or B)</b> (E: 10A SPST P.B ON TOP &amp; 10A SPST P.B ON SIDE) (B: 10A SPST P.B ON TOP &amp; MICROSWITCH ON SIDE)</p> <p><b>RG9E</b> (5A SPDT MAINTAINED P.B ON TOP &amp; 10A SPST P.B ON SIDE)</p>	<p><b>RG5 (E or B)</b> E - ROCKER SWITCH ON TOP WITH 10A SPST N.O P.B ON B - ROCKER SWITCH ON TOP WITH MICROSWITCH ON SIDE</p>	<p><b>RG7</b> (4A SPST P.B ON TOP &amp; 10A SPST P.B ON SIDE) :NO FLANGELESS:</p> <p><b>RG9</b> (5A SPDT MAINTAINED P.B ON TOP &amp; 10A SPST P.B ON SIDE) :NO FLANGELESS:</p> <p><b>RG4</b> (10A SPST ON SIDE)</p> <p><b>RG6</b> (10A SPST P.B ON TOP &amp; 10A SPST P.B ON SIDE)</p>											
<p><b>RG10</b> (10A SPST P.B ON TOP &amp; TWO 10A SPST P.B ON SIDE) :NO FLANGELESS:</p> <p><b>RG11</b> (TWO 10A SPST P.B ON SIDE)</p>	<p><b>RG12</b> (MAINTAINED ROCKER SWITCH ON TOP)</p> <p>REDUCED FLANGE FULL FLANGE</p>	<p><b>RG13</b> (2 SPDT SWITCHES ACTUATED BY MAINTAINED ROCKER ON TOP &amp; 10A SPST MOMENTARY SWITCH ON SIDE)</p> <p>REDUCED FLANGE FULL FLANGE</p>	<p><b>RG16</b> (ROCKER SWITCH ON TOP &amp; 5A SPDT MAINTAINED P.B ON SIDE)</p> <p>REDUCED FLANGE FULL FLANGE</p>	<p><b>RG17</b> (ROCKER SWITCH MOUNTED VERTICALLY ON SIDE)</p> <p>REDUCED FLANGE FULL FLANGE</p>	<p><b>RG18</b> (5A SPDT P.B ON TOP &amp; TWO 5A SPST P.B ON SIDE) :NO FLANGELESS:</p> <p><b>RG19</b> (2 SPDT SWITCHES ACTUATED BY MAINTAINED ROCKER ON TOP &amp; 5A SPST MAINTAINED SWITCH ON SIDE)</p> <p>REDUCED FLANGE FULL FLANGE</p>											
<p><b>MULTIFUNCTION ADAPTER</b></p>	<p><b>RG4X (SHEATH OPTIONAL)</b></p>	<p><b>RG20</b> (5A SPDT MAINTAINED P.B ON TOP &amp; 5A SPDT MAINTAINED P.B ON SIDE) :NO FLANGELESS:</p> <p>REDUCED FLANGE FULL FLANGE</p>	<p><b>RG21</b> (ROCKER SWITCH ON TOP WITH MAINTAINED ON RIGHT SIDE AND SPRING RETURN ON LEFT SIDE) :NO FLANGELESS:</p> <p>REDUCED FLANGE FULL FLANGE</p>	<p><b>RG24</b> (2 SPDT SWITCHES ACTUATED BY MAINTAINED ROCKER ON TOP &amp; 5A SPDT MAINTAINED SWITCH ON SIDE)</p> <p>REDUCED FLANGE FULL FLANGE</p>	<p><b>RG33</b></p> <p><b>RG34</b></p>											
<p><b>RG0A</b></p> <p><b>RG4 E&amp;B (A-ADAPTOR)</b></p>	<p><b>RG5X (SHEATH OPTIONAL)</b></p>	<p><b>RG25</b> (ROCKER SWITCH MOUNTED ON TOP AND 2 SPST PUSHBUTTON ON SIDE)</p> <p>CAP NOT TOOLED 3D PRINTED ONLY</p>	<p><b>RG26</b> (MAINTAINED ROCKER SWITCH ON TOP)</p> <p>REDUCED FLANGE FULL FLANGE</p>	<table border="1"> <tr> <td> <p><b>DRAWN BY</b> MER</p> <p><b>CHECKED</b> DDO</p> <p>APVD ENG.</p> <p>APVD DESN</p> <p>APVD SALES</p> </td> <td> <p><b>DATE</b> 4/6/17</p> <p>5/25/17</p> </td> <td> <p><b>OEM CONTROLS</b></p> <p>10 Controls Drive - Shelton, CT 06484 Phone: (203) 929-8431 Fax: (203) 929-3867</p> </td> </tr> <tr> <td colspan="3"> <p><b>PAGE 3 OF 5</b></p> <p><b>HMS8 CATALOG</b></p> <p><b>HANDLE OPTIONS</b></p> </td> </tr> <tr> <td> <p><b>PROJECTION:</b> </p> </td> <td> <p><b>PART NO.</b></p> <p><b>SCALE</b> NTS</p> </td> <td> <p><b>DWG NO.</b> B29830</p> <p><b>SHEET</b> 3 OF 5</p> </td> </tr> <tr> <td></td> <td></td> <td> <p><b>REV</b> B</p> <p><b>SIZE</b> B</p> </td> </tr> </table>	<p><b>DRAWN BY</b> MER</p> <p><b>CHECKED</b> DDO</p> <p>APVD ENG.</p> <p>APVD DESN</p> <p>APVD SALES</p>	<p><b>DATE</b> 4/6/17</p> <p>5/25/17</p>	<p><b>OEM CONTROLS</b></p> <p>10 Controls Drive - Shelton, CT 06484 Phone: (203) 929-8431 Fax: (203) 929-3867</p>	<p><b>PAGE 3 OF 5</b></p> <p><b>HMS8 CATALOG</b></p> <p><b>HANDLE OPTIONS</b></p>			<p><b>PROJECTION:</b> </p>	<p><b>PART NO.</b></p> <p><b>SCALE</b> NTS</p>	<p><b>DWG NO.</b> B29830</p> <p><b>SHEET</b> 3 OF 5</p>			<p><b>REV</b> B</p> <p><b>SIZE</b> B</p>
<p><b>DRAWN BY</b> MER</p> <p><b>CHECKED</b> DDO</p> <p>APVD ENG.</p> <p>APVD DESN</p> <p>APVD SALES</p>	<p><b>DATE</b> 4/6/17</p> <p>5/25/17</p>	<p><b>OEM CONTROLS</b></p> <p>10 Controls Drive - Shelton, CT 06484 Phone: (203) 929-8431 Fax: (203) 929-3867</p>														
<p><b>PAGE 3 OF 5</b></p> <p><b>HMS8 CATALOG</b></p> <p><b>HANDLE OPTIONS</b></p>																
<p><b>PROJECTION:</b> </p>	<p><b>PART NO.</b></p> <p><b>SCALE</b> NTS</p>	<p><b>DWG NO.</b> B29830</p> <p><b>SHEET</b> 3 OF 5</p>														
		<p><b>REV</b> B</p> <p><b>SIZE</b> B</p>														

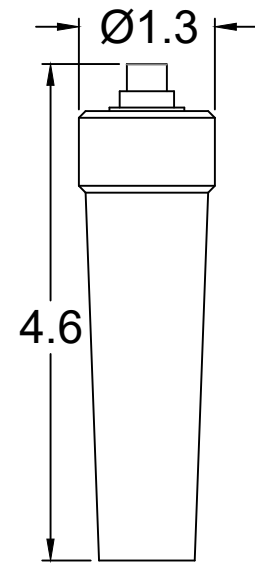
# CAP OPTIONS

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REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
-	B	UPDATED CATALOG AS PER ECN#503	MAH*5/28/20	

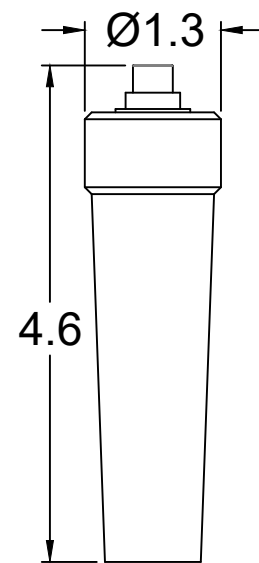
## RG22

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

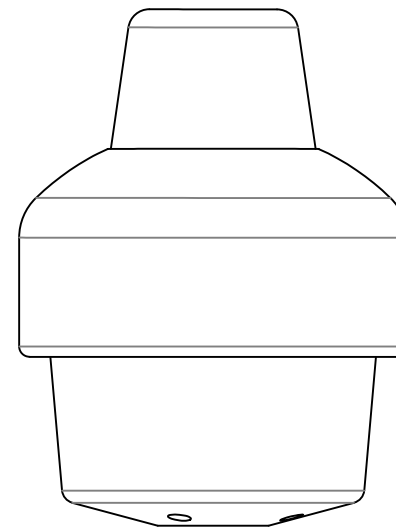


## RG23

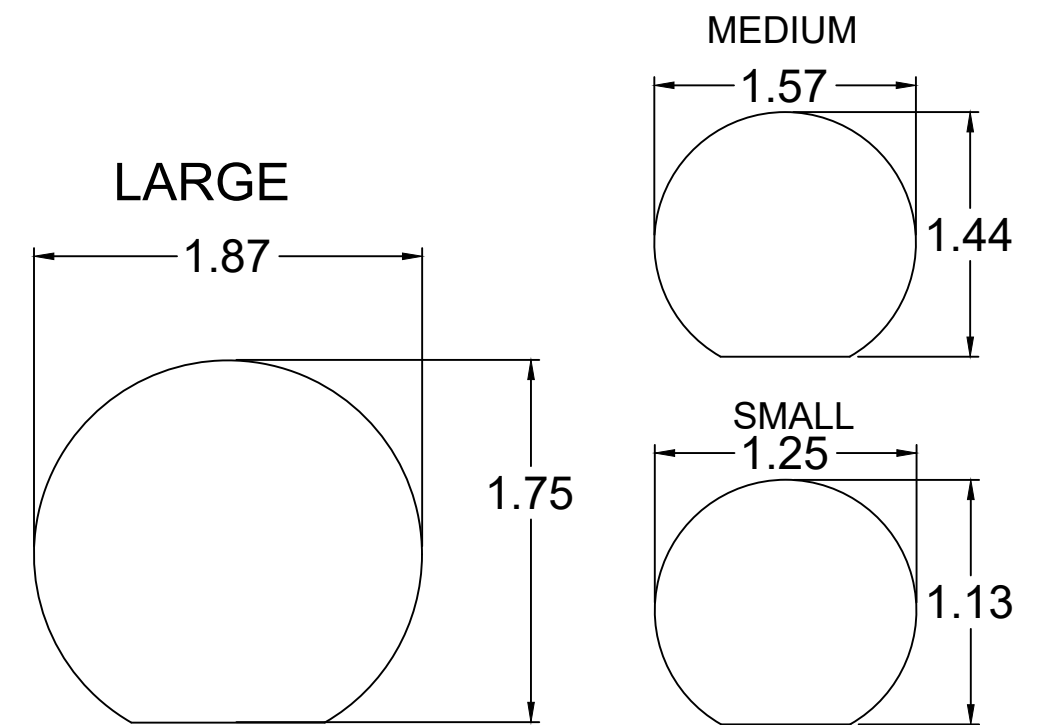
(SLIMLINE HANDLE WITH 10A SPST PUSH-BUTTON ON TOP)



## PB CAP

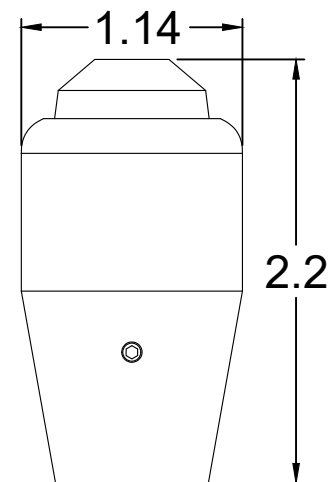
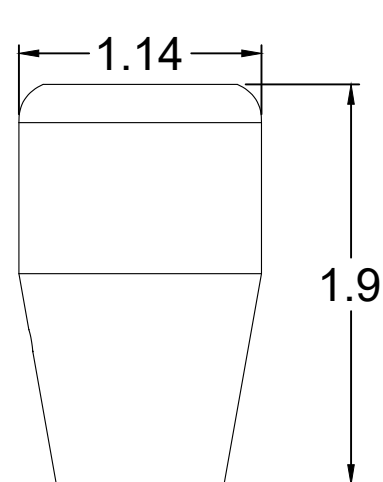


## ROUND BALL (8MM SHAFT ONLY)



SOLID KNOB (8mm SHAFT ONLY)

WITH PUSHBUTTON



DRAWN BY	<b>MER</b>	DATE	<b>4/6/17</b>
CHECKED	<b>DDO</b>		<b>5/25/17</b>
APVD ENG.			
APVD DESN			
APVD SALES			



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**PAGE 4 OF 5**  
**HMS8 CATALOG**  
**HANDLE OPTIONS**

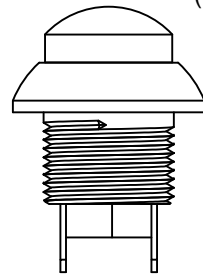
PROJECTION:		PART NO.	DWG NO. <b>B29830</b>	REV <b>B</b>
		SCALE <b>NTS</b>	SHEET <b>4 OF 5</b>	SIZE <b>B</b>

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REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	B	UPDATED CATALOG AS PER ECN#503	MAH*5/28/20	

STANDARD COMPONENTS SHOWN. OTHERS AVAILABLE UPON REQUEST

**RAISED DOME PUSHBUTTON (SPST) IP/64**



**AVAILABLE COLORS**

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

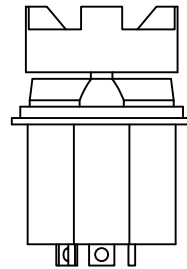
**RAISED DOME PUSHBUTTON (SPST) IP/68**

**AVAILABLE COLORS**

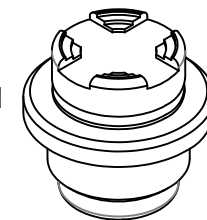
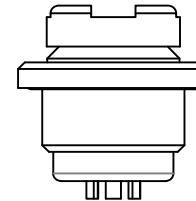
- RED
- BLACK
- YELLOW
- WHITE
- GRAY
- ORANGE
- GREEN
- BLUE

**4 WAY ROCKER (ON/OFF DIGITAL)**

**AVAILABLE OPTIONS**

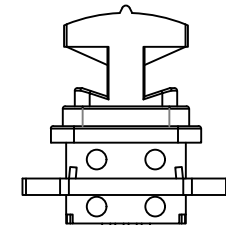
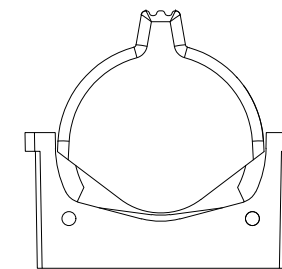


- TACTILE
- NO TACTILE



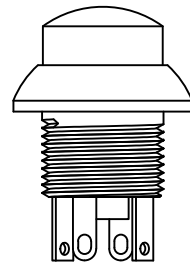
**OTHER OPTIONS**

**S12 SINGLE PROPORTIONAL**



**S9 SWITCH SINGLE PROPORTIONAL**

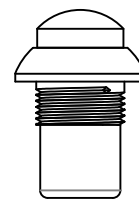
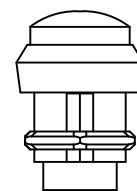
**RAISED DOME PUSHBUTTON (SPDT) IP/64**



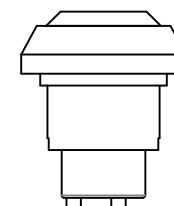
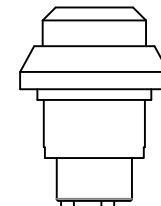
**AVAILABLE COLORS**

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

**HALL EFFECT (ON/OFF) PUSHBUTTONS**

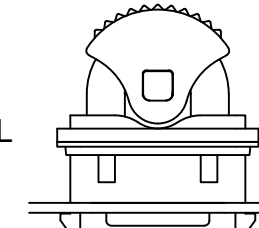
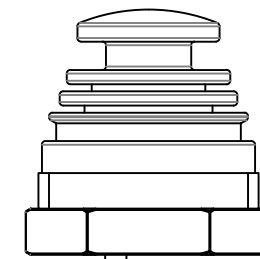


**HALL EFFECT TACTILE/NO TACTILE**



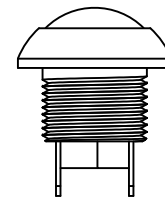
**RAISED & FLUSH DOME**

**JS20 DUAL PROPORTIONAL**



**HMS10 SINGLE PROPORTIONAL**

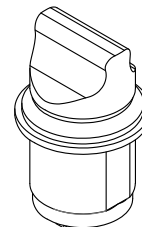
**FLUSH DOME PUSHBUTTON IP/64**



**AVAILABLE COLORS**

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

**ROCKER SWITCHES**



- OPTIONS**
- MOM-OFF-MOM
  - MAINT ON-ON
  - MAINT ON-OFF-ON



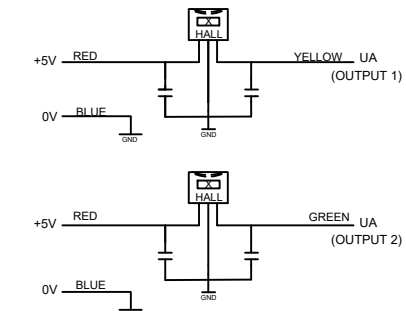
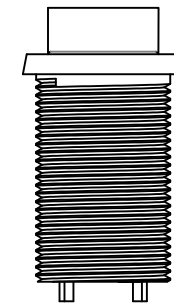
- OPTIONS**
- MOM-OFF-MOM
  - MAINT ON-ON
  - MAINT ON-OFF-ON

**PROPORTIONAL PUSHBUTTON**

**AVAILABLE COLORS**

- WHITE
- BLACK

**DUAL PROPORTIONAL**

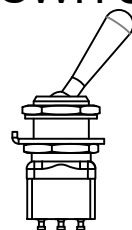


OUTPUT 1: 0.5V - 4.5V  
OUTPUT 2: 4.5V - 0.5V

**TOGGLE SWITCHES**



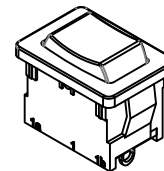
**MOM-OFF-MOM**



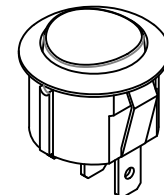
**MAINT ON-ON**



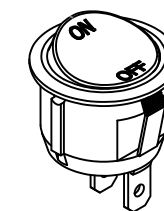
**MAINT ON-OFF-ON**



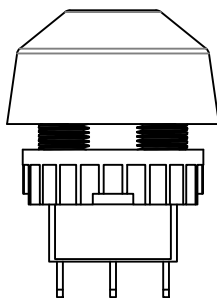
- OPTIONS**
- MOM-MOM
  - MAINT-OFF-MAINT



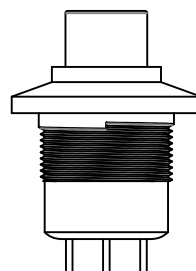
- OPTIONS**
- MOM-OFF-MOM
  - MA-OFF-MA
  - GREEN AND RED LED AVAILABLE



- OPTIONS**
- ON-OFF



**PUSHBUTTON WITH MINI MICRO**



**MAINTAINED PUSHBUTTON**

**AVAILABLE COLORS**

- BLACK
- WHITE

DRAWN BY	<b>MER</b>	DATE	<b>4/6/17</b>
CHECKED	<b>DDO</b>		<b>5/25/17</b>
APVD ENG.			
APVD DESN			
APVD SALES			
PROJECTION:			



10 Controls Drive - Shelton, CT 06484  
Phone: (203) 929-8431 Fax: (203) 929-3867

**PAGE 5 OF 5**  
**HMS8 CATALOG**  
**HANDLE COMPONENT OPTIONS**

PART NO.	DWG NO. <b>B29830</b>	REV <b>B</b>
SCALE <b>NTS</b>	SHEET <b>5 OF 5</b>	SIZE <b>B</b>