

MECHANICAL OPTIONS

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REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
	C	S12 ADDED PER ECN#28913	MER*5/3/17	

MOUNTING DIMENSIONS

STANDARD

RG4(E&B), RG5(E&B), RG6 (E&B)

BOOT OPTIONS

FRICTION HOLD BOOT (STANDARD)

JS5 FLANGE BOOT (OPTIONAL)

RG4E/RG4B & RG5E/RG5B (STANDARD)

SPRING RETURN HANDLE BOOT (STANDARD)

Handle Travel Direction

SEE HANDLE LENGTH OPTIONS

Specs:

IP rating: IP67

Temperature Rating:-40 to 70°C

Mechanical life :1million cycles

EMC tests per EN61000-4.3 and ISO 11452

Note: All dimensions shown are in inches unless stated otherwise

Max load:

At end of shaft: 250 lb

With maintain center:185 lb

ELECTRONIC CONFIGURATIONS

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	1	2	1	0V to Vbat - 1V*	Yes	Yes	*Actual Output values and curve shape set by software. Analog Output tolerances per chart on right.
9V - 30V	PROPORTIONAL DUTY CYCLE OUTPUT	2	0	2	0% TO 100% Duty Cycle*	No	Yes	
4.5V - 7.5V	Voltage Output	0	0	1	0.25V - 6.75V	Yes	Yes	
4.5V - 7.5V	Voltage Output	0	0	1	0V - 7.5V	Yes	Yes	
9V - 30V	PLC Current Output	1	2	1	4mA to 20mA*	No	Yes	
9V - 30V	Voltage Output	4	4	1	0V to Vbat - 1V*	Yes	Yes	
9V - 30V	Voltage Output	1	2	1	0V to Vbat - 1V*	Yes	Yes	

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

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-4	9V - 32V	CAN Open (DS401), J1939	4	0	0	0	No	No	Yes	*Four "Ground Matrix" inputs provide an ID feature. These inputs are sinking (active low) type.
OCI-9	9V - 32V	CAN Open (DS401), J1939	1	0	0	0	No	No	Ground Matrix*	

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

ANALOG OUTPUT TOLERANCE

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
4mA ≤ OUT ≤ 12mA	+/-0.25mA
12mA < OUT ≤ 20mA	+/-0.50mA

HANDLE OPERATION

A-B AXIS

1) SPRING RETURN

2) HEAVY DUTY SPRING RETURN

3) FRICTION HOLD

4) MAINTAIN CENTER

DETENT CENTER

MICROSWITCH OPTIONS

1) NONE (OPTIONAL)

2) 1 MICROSWITCH (STANDARD)

3) 2 MICROSWITCHES (OPTIONAL)

4) 3 MICROSWITCHES (OPTIONAL)

ENCLOSURE OPTIONS

1) PLASTIC (STANDARD)

2) METAL (OPTIONAL)

3) NONE (NOT RECOMMENDED)

HANDLE SHAFT LENGTH OPTIONS

SHAFT LENGTH	HANDLE HEIGHT	HANDLE TRAVEL
63mm	2.4"	1.3" EACH DIRECTION
80mm	3.1"	1.6" EACH DIRECTION
100mm	3.9"	2.1" EACH DIRECTION
150mm	5.8"	3.1" EACH DIRECTION

HANDLE OPTIONS

SEE HANDLE OPTIONS SHEET

PLATE OPTIONS

WITH MICROSWITCH

WITHOUT MICROSWITCH

PENDENT WIRES

DEUTSCH CONNECTOR

AMP CONNECTOR

M12 CONNECTOR

DRAWN BY MER

CHECKED DDO

APVD ENG.

APVD DESN

APVD SALES

PROJECTION:

DATE 5-17-16

5/17/16

10 Controls Drive - Shelton, CT 06484

Phone: (203) 929-8431 Fax: (203) 929-3867

PAGE 1 OF 3

HMS7 CATALOG

MECHANICAL

PART NO.

DWG NO. B29734

REV C

SCALE 1:1

SHEET 1 OF 3

SIZE B

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

Technical drawings of RG0, RG2, RG3, and RG8 handles. RG0 is a blank handle with a height of 3.6 and a base diameter of Ø1.5. RG2 is a 10A SPST momentary P.B on top with three variants: flangeless (height 3.6, base Ø1.5), reduced flange (height 4.5, base Ø1.6), and full flange (height 4.5, base Ø2.4). RG3 is a 4A DPST P.B on top with a height of 4.5 and a base diameter of Ø2.4. RG8 is a 5A SPDT maintained P.B on top with no flangeless variant, with a height of 4.5 and a base diameter of Ø2.4.

RG1
(ROCKER SWITCH ON TOP)

RG21
(ROCKER SWITCH ON TOP WITH
MAINTAINED ON RIGHT SIDE AND
SPRING RETURN ON LEFT SIDE)
:NO FLANGELESS:

FLANGELESS

REDUCED FLANGE

FULL FLANGE

Technical drawings of RG1 and RG21 rocker switches. RG1 is a rocker switch on top with a height of 3.8 for the flangeless variant, 4.7 for the reduced flange variant, and 4.7 for the full flange variant. RG21 is a rocker switch on top with maintained on right side and spring return on left side, with no flangeless variant, with a height of 4.7 and a base diameter of Ø2.4.

RG4
(10A SPST ON SIDE)

RG6
(10A SPST P.B ON TOP &
10 A SPST P.B ON SIDE)

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:

RG20
(5A SPDT MAINTAINED P.B ON TOP &
5A SPDT MAINTAINED P.B ON SIDE)
:NO FLANGELESS:

FLANGELESS

REDUCED FLANGE

FULL FLANGE

Technical drawings of RG4, RG6, RG7, RG9, and RG20 switches. RG4 is a 10A SPST on side with a height of 3.6 for the flangeless variant and 4.5 for the reduced flange variant. RG6 is a 10A SPST P.B on top & 10A SPST P.B on side with a height of 4.5 for the flangeless variant and 4.5 for the reduced flange variant. RG7 is a 4A SPST P.B on top & 10A SPST P.B on side with no flangeless variant, with a height of 4.5 and a base diameter of Ø1.6. RG9 is a 5A SPDT maintained P.B on top & 10A SPST P.B on side with no flangeless variant, with a height of 4.5 and a base diameter of Ø2.4. RG20 is a 5A SPDT maintained P.B on top & 5A SPDT maintained P.B on side with no flangeless variant, with a height of 4.5 and a base diameter of Ø2.4.

RG5
(ROCKER SWITCH ON TOP WITH
10A SPST N.O P.B ON SIDE)

RG16
(ROCKER SWITCH ON TOP & 5A
SPDT MAINTAINED P.B ON SIDE)

REDUCED FLANGE

FULL FLANGE

Technical drawings of RG5 and RG16 rocker switches. RG5 is a rocker switch on top with 10A SPST N.O P.B on side with a height of 4.7 and a base diameter of Ø1.6. RG16 is a rocker switch on top & 5A SPDT maintained P.B on side with a height of 4.7 and a base diameter of Ø2.4.

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)

FLANGELESS

REDUCED FLANGE

Technical drawings of RG4, RG6, and RG9E switches. RG4 is a 10A SPST on side with a height of 4.0 and a base diameter of Ø1.5. RG6 is a 10A SPST P.B on top & 10A SPST P.B on side with a height of 4.1 and a base diameter of Ø1.5. RG9E is a 5A SPDT maintained P.B on top & 10A SPST P.B on side with a height of 4.1 and a base diameter of Ø1.5.

RG5(E or B)
(E: ROCKER SWITCH ON TOP
WITH 10A SPST N.O P.B ON SIDE)
(B: ROCKER SWITCH ON TOP
WITH MICROSWITCH ON SIDE)

FLANGELESS

REDUCED FLANGE

Technical drawings of RG5 switches. RG5 is a rocker switch on top with 10A SPST N.O P.B on side with a height of 4.1 and a base diameter of Ø1.5.

RG10
(10A SPST P.B ON TOP &
TWO 10A SPST P.B ON SIDE)
:NO FLANGELESS:

RG11
(TWO 10A SPST P.B ON SIDE)

RG18
(5A SPDT P.B ON TOP & TWO
5A SPDT P.B ON SIDE)
:NO FLANGELESS:

FLANGELESS

REDUCED FLANGE

FULL FLANGE

Technical drawings of RG10, RG11, and RG18 switches. RG10 is a 10A SPST P.B on top & two 10A SPST P.B on side with no flangeless variant, with a height of 3.6 and a base diameter of Ø1.5. RG11 is a two 10A SPST P.B on side with a height of 4.5 and a base diameter of Ø1.6. RG18 is a 5A SPDT P.B on top & two 5A SPDT P.B on side with no flangeless variant, with a height of 4.5 and a base diameter of Ø2.4.

RG12
(MAINTAINED ROCKER SWITCH ON TOP)

REDUCED FLANGE

FULL FLANGE

Technical drawings of RG12 maintained rocker switch. RG12 is a maintained rocker switch on top with a height of 4.8 and a base diameter of Ø1.6.

RG13
(MAINTAINED ROCKER
SWITCH ON TOP WITH 10A
SPST P.B ON SIDE)

RG19
(MAINTAINED ROCKER SWITCH
ON TOP WITH 5A SPDT
MAINTAINED P.B ON SIDE)

REDUCED FLANGE

FULL FLANGE

Technical drawings of RG13 and RG19 maintained rocker switches. RG13 is a maintained rocker switch on top with 10A SPST P.B on side with a height of 4.8 and a base diameter of Ø1.6. RG19 is a maintained rocker switch on top with 5A SPDT maintained P.B on side with a height of 4.8 and a base diameter of Ø2.4.

RG14 & RG15

RG14 PUSHBUTTON PALM
HANDLE (RIGHT HANDED)

RG15 PUSHBUTTON PALM
HANDLE (LEFT HANDED)

Technical drawings of RG14 and RG15 pushbutton palm handles. RG14 is a right-handed pushbutton palm handle with a height of 2.5 and a base diameter of Ø2.8. RG15 is a left-handed pushbutton palm handle with a height of 2.5 and a base diameter of Ø2.8.

RG17
(ROCKER SWITCH MOUNTED VERTICALLY ON SIDE)
REDUCED FLANGE

FULL FLANGE

Technical drawings of RG17 rocker switch. RG17 is a rocker switch mounted vertically on side with a height of 4.5 and a base diameter of Ø1.5.

MULTIFUNCTION ADAPTER

RG0A

RG4 E&B (A-ADAPTOR)

Technical drawings of Multifunction Adapter, RG0A, and RG4 E&B (A-Adaptor). Multifunction Adapter is a hexagonal adapter with a height of 2.23 and a base diameter of Ø2.53. RG0A is a rocker switch with a height of 6.20 and a base diameter of Ø2.53. RG4 E&B (A-Adaptor) is a rocker switch with a height of 5.60 and a base diameter of Ø2.53.

ROUND BALL

SOLID CAP HANDLE

SOLID KNOB

SOLID KNOB
WITH PUSHBUTTON

PALM KNOB

Technical drawings of Round Ball, Solid Cap Handle, Solid Knob, Solid Knob with Pushbutton, and Palm Knob. Round Ball is a round ball with a height of 1.25 and a base diameter of Ø1.14. Solid Cap Handle is a solid cap handle with a height of 1.3 and a base diameter of Ø1.14. Solid Knob is a solid knob with a height of 1.9 and a base diameter of Ø1.14. Solid Knob with Pushbutton is a solid knob with pushbutton with a height of 2.2 and a base diameter of Ø1.14. Palm Knob is a palm knob with a height of 1.3 and a base diameter of Ø2.0.

MG15

MG15L
(PROTO)

MG15R

MG16
(PROTO)

Technical drawings of MG15, MG15L, MG15R, and MG16. MG15 is a rocker switch with a height of 5.2 and a base diameter of Ø1.3. MG15L is a rocker switch with a height of 5.2 and a base diameter of Ø1.3. MG15R is a rocker switch with a height of 5.2 and a base diameter of Ø1.3. MG16 is a rocker switch with a height of 5.2 and a base diameter of Ø1.3.

DRAWN BY ALB

CHECKED DDO

APVD ENC.

APVD DESN

APVD SALES

PROJECTION:

DATE 5-17-16

5/17/16

10 Controls Drive - Shelton, CT 06484

Phone: (203) 929-8431 Fax: (203) 929-3867

PAGE 2 OF 3

HMS7 CATALOG

ELECTRONICS

PART NO.

DWG NO. B29734

SHEET 2 OF 3

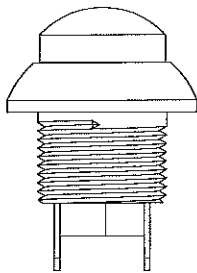
REV C

SIZE B

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REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	C	S12 ADDED PER ECN#28913	MER*5/3/17	<i>DDO 5/4/17</i>

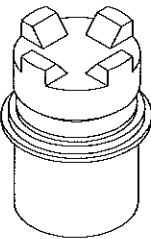
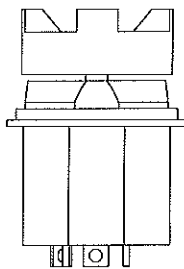
STANDARD COMPONENTS SHOWN. OTHERS AVAILABLE UPON REQUEST



RAISED DOME PUSHBUTTON
(SPST)

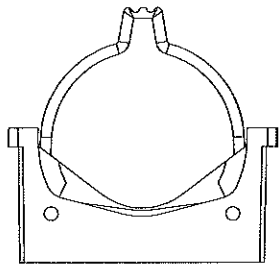
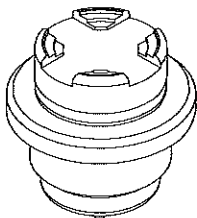
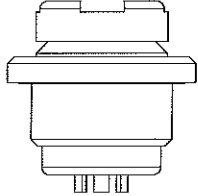
AVAILABLE COLORS

- RED
- BLACK
- YELLOW
- WHITE
- GRAY
- ORANGE

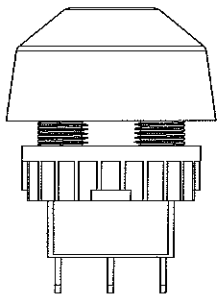


4 WAY ROCKER
AVAILABLE OPTIONS

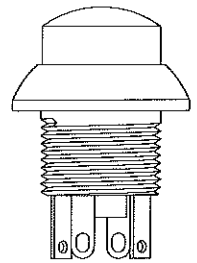
- TACTILE
- NO TACTILE



S12
SWITCH



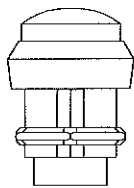
PUSHBUTTON
WITH MINI
MICRO



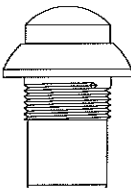
RAISED DOME PUSHBUTTON
(SPDT)

AVAILABLE COLORS

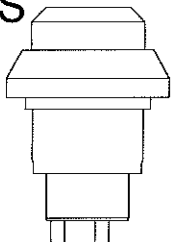
- WHITE
- YELLOW
- GRAY
- ORANGE
- BLUE
- GREEN



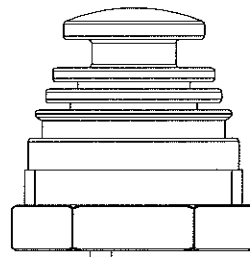
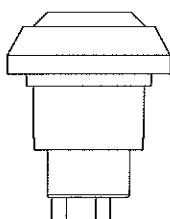
HALL EFFECT



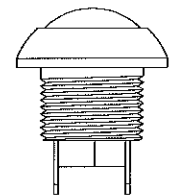
TACTILE/NO TACTILE



RAISED & FLUSH DOME



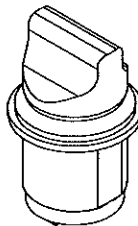
JS20 (SEE
MAIN
CATALOG)



FLUSH DOME PUSHBUTTON

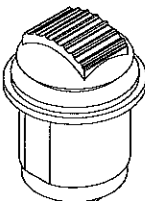
AVAILABLE COLORS

- YELLOW
- RED
- BLUE
- GREEN
- BLACK



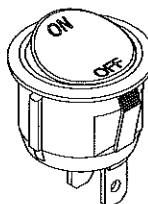
OPTIONS

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



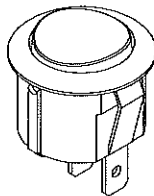
OPTIONS

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



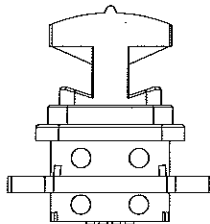
OPTIONS

- ON-OFF

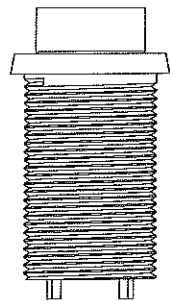


OPTIONS

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



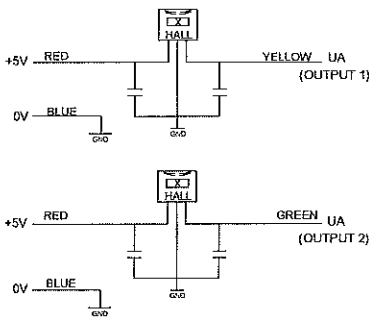
S9 SWITCH
(SEE MAIN
CATALOG)



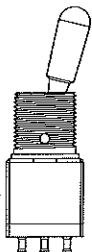
PROPORTIONAL PUSHBUTTON

AVAILABLE COLORS

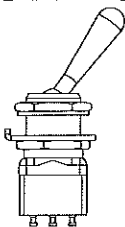
- WHITE
- BLACK



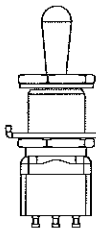
OUTPUT 1: 0.5V - 4.5V
OUTPUT 2: 4.5V - 0.5V



MOM-OFF-MOM

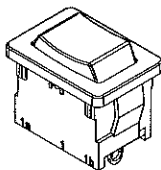


MAINT ON-ON



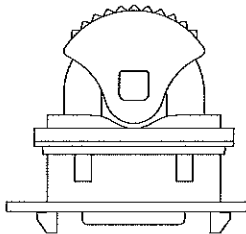
MAINT ON-OFF-ON

TOGGLE SWITCHES

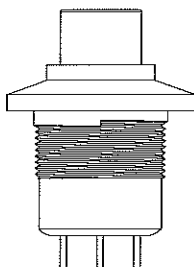


OPTIONS

- MOM-MOM
- MAINT-OFF-MAINT



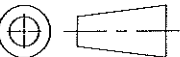
HMS10 (SEE
MAIN CATALOG)



MAINTAINED PUSHBUTTON

AVAILABLE COLORS

- BLACK
- WHITE

DRAWN BY ALB	DATE 5-17-16	 10 Controls Drive – Shelton, CT 06484 Phone: (203) 929-8431 Fax: (203) 929-3867	
CHECKED DDO	5/17/16		
APVD ENG.		PAGE 3 OF 3 HMS7 CATALOG HANDLE OPTIONS	
APVD DESN			
APVD SALES			
PROJECTION: 	1 1	PART NO.	DWG NO. B29734
		SCALE 1:1	REV C
			SHEET 3 OF 3
			SIZE B