

JHM Hall Effect Joystick



JHM with
Hall Effect Rocker



JHM with
Ball Handle Style



JHM with G3-D
Handle Style

The JHM is a full-function, medium, Hall effect joystick for off-highway and industrial applications. Its shorter-behind-panel depth fits armrests and other tight spaces, and it can be mounted from the top or bottom.

The joystick comes with one of 18 handle styles, such as a ball or handles with pushbuttons, rockers, keypads or Operator Presence. The JHM is also compatible with most of OTTO's G3 Universal grips.

Product Features

- Designed for tight spaces in armrests and panels
- Electronics sealed to IP68S
- Up to 10 million operational cycles in all directions
- 18 handle styles
- Compatible with G3 Universal commercial grips (top mount only)
- Output options: CANopen, CAN J1939, USB, PWM, serial and analog
- Redundant sensors available
- Nine gating options
- RoHS compliant

Standard Characteristics/Ratings:

Sensor Type:	Hall effect analog, factory programmed with temperature compensation, ground and supply line break detection, and over voltage and reverse voltage protection options.			
Design:	Contactless sensing using dual bar permanent magnet.			

ELECTRICAL RATINGS: Joystick Rated at 5V @ 20°C, Load = 1mA (4.7kΩ)

Electrical	Units	Min	Typ	Max
Supply Voltage, Vcc	VDC	4.5	5.0	5.5
Output Voltage Tolerance at Center AA, BB, CC, DD, EE, FF, GG & HH	5V Vec	-0.25	N/A	+0.25
Output Voltage Tolerance at Center AT, BT, CT, DT, ET & FT	5V Vec	-0.15	N/A	+0.15
Output Voltage Tolerance Full Travel	5V Vec	-0.25	N/A	+0.25
Supply Current Per Sensor	mA	N/A	N/A	10.00
Output Source Current Limit	mA	-1.00	N/A	1.00

ELECTRICAL RATINGS: U2 Rated at Vcc = 5V @ 25°C, Load = 1mA (4.7kΩ)

Electrical	Units	Min	Typ	Max
Supply Voltage, Vcc	VDC	4.5	5.0	5.5
Output Voltage +, - 0° Deflection	5V Vec	2.25	2.50	2.75
Output at Full Travel Direction -Z	5V Vec	0.45	0.50	0.75
Output at Full Travel Direction +Z	5V Vec	4.25	4.50	4.55
Supply Current B-D, Vec=5V, 10-6	mA	N/A	N/A	10.00

ELECTRICAL RATINGS: P9 Switches Rated at 10mA Resistive Load at 5VDC

Electrical Life:	1,000,000 cycles
------------------	------------------

MECHANICAL (JOYSTICK):

Mechanical Life:	5 Million Cycles, High Force 10 Million Cycles, Low Force 2.5 Million Cycles, Outputs JJ, KKMM, Rear Mount 250,000 Cycles, Friction Held, High Force Boot Life up to 1 Million Cycles
------------------	---

Mechanical (Operating Force w/Boot)	Units	Min	Typ	Max
Travel Angle	Degrees	18°	20°	22°
High Force @ 2" GRP (Return to Center)	Lbs.	0.5	1.25	2.0
Low Force @ 2" GRP (Return to Center)	Lbs.	0.5	1.0	1.5
High Force @ 3" GRP (Return to Center)	Lbs.	0.5	1.0	1.5
Low Force @ 3" GRP (Return to Center)	Lbs.	0.4	0.7	1.0
High Force @ 4" GRP (Return to Center)	Lbs.	1.2	2.5	3.0
Handle Styles 51, 52, 53				
Low Force @ 4" GRP (Return to Center)	Lbs.	0.4	0.8	1.2
Handle Styles 51, 52, 53				
High Force @ 4" GRP Y Direction @ 2" GRP (Friction)	Lbs.	1.5	4.5	7.5
High Force (w/Boot) Friction @ 3" GRP, Y Direction	Lbs.	1.0	3.5	6.0
High Force (w/Boot) Friction @ 4" GRP (Handle Styles 51, 52, 53), Y Direction	Lbs.	0.8	2.4	4.0

MECHANICAL (U2 SWITCH): 2,500,000 Cycle Mechanical Life

Mechanical	Units	Min	Typ	Max
Operating Force	Oz.	3.5	6.5	9.5

MECHANICAL (P9 SWITCH): 1,250,000 Cycle Mechanical Life

Mechanical	Units	Min	Typ	Max
Operating Force	Oz.	8	12	16

MECHANICAL (KEYPAD PUSHBUTTONS): 3,000,000 Cycle Mechanical Life

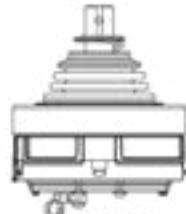
Mechanical	Units	Min	Typ	Max
Operating Force	Oz.	2	8	10

ENVIRONMENTAL

Electronics (Handles 11, 12, 21, 35, 41, 53, 71, 72)	IP68S
Seal	Handle styles 34 and 35 panel sealed to IP68S
RFI / EMI	Withstand per SAE J1113

JHM HANDLE STYLES

JHM Handle Styles



HANDLE 11
(NO HANDLE)



HANDLE 12
(STANDARD BLANK)



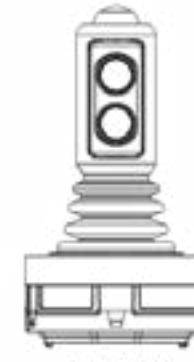
HANDLE 21
(W/HALL EFFECT ROCKER)



HANDLE 31
(W/PUSHBUTTON,
TOP HANDLE, HALF BOOT)



HANDLE 32
(W/2X PUSHBUTTONS)



HANDLE 33
(W/3X PUSHBUTTONS)



HANDLE 34
(W/PUSHBUTTON,
TOP HANDLE, FULL BOOT)



HANDLE 35
(NO PUSHBUTTON,
TOP HANDLE, FULL BOOT)



HANDLE 41
(LOCKOUT)



HANDLE 51
(G3-D WITH ROCKER
AND OPERATOR PRESENCE)



HANDLE 52
(G3-D)



HANDLE 53
(G3-D)



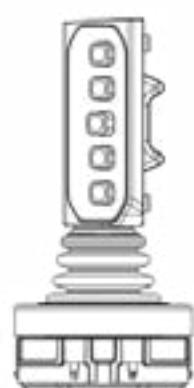
HANDLE 54
(G3-D WITH
OPERATOR PRESENCE)



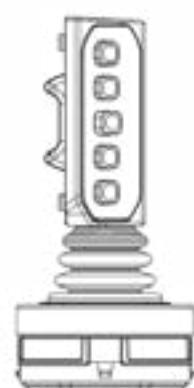
HANDLE 61
(3-BUTTON KEYPAD &
HALL ROCKER RIGHT)



HANDLE 62
(3-BUTTON KEYPAD &
HALL ROCKER LEFT)



HANDLE 63
(7-BUTTON KEYPAD &
HALL ROCKER RIGHT)



HANDLE 64
(7-BUTTON KEYPAD &
HALL ROCKER LEFT)



HANDLE 71
(LARGE BALL)



HANDLE 72
(SMALL BALL)